

## **EXHIBIT 49**

## **EXHIBIT 49**

**From:** Sam Teller [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3BBD889935194BE5BF3603B89339F2AE-SAM TELLER]  
**Sent:** 7/10/2018 8:12:07 AM  
**To:** James Gleeson [James.Gleeson@spacex.com]  
**Subject:** Re: Thailand story

Thank you! I was about to email him. Really appreciate you guys hitting this hard today. We haven't slept in about 24 hours and are about to crash here...

> On Jul 10, 2018, at 10:56 PM, James Gleeson <James.Gleeson@spacex.com> wrote:  
 >  
 > Sean and I are pushing E's latest tweets to every reporter who wrote the BS "not practical" narrative.  
 >  
 > -----Original Message-----  
 > From: Timothy Lee <timothy.lee@arstechnica.com>  
 > Sent: Tuesday, July 10, 2018 10:47 AM  
 > To: James Gleeson <James.Gleeson@spacex.com>  
 > Subject: Re: Thailand story  
 >  
 > Oh, that tweet actually seems more convincing than the prime minister's comments. I will add it to the piece. Thanks for the heads up.  
 >  
 > By the way, we'd love to go deeper on this story and get some technical details about the design process, the device itself, and how it relates to SpaceX's efforts for EVA, Mars exploration, etc. Please let me know if Musk and/or engineers involved in the process would like to talk to us.  
 >  
 > Thanks!  
 >  
 > -Tim  
 >  
 >> On Jul 10, 2018, at 10:28 AM, James Gleeson <James.Gleeson@spacex.com> wrote:  
 >>  
 >> Thanks, Tim. I am checking to see if there's an official version.  
 >>  
 >> Again, off the record, the way the story is framed makes it sound like the support was not welcome. However, that's not the case as the PM made clear or as the dive rescue team told Elon directly:  
 >> [https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_twitter.com\\_elonmusk\\_status\\_1016684366083190785&d=DwIGaQ&c=m5pJjvhoJ8du6Q8es33zcr1MoqSJBzBMTzh4icn4nJ8&r=EMs3TstxaeOnEPD9tc-nSZHH-EgapwHHrT3fIDi7EyI&m=e8JRdydw4kRm2femqX5w0CLjAVtUf0m5D-mY4NEaO9c&s=8bTA19scFfoY-W1cBaqMGwTeBJIRioAAcu83zOpanf0&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__twitter.com_elonmusk_status_1016684366083190785&d=DwIGaQ&c=m5pJjvhoJ8du6Q8es33zcr1MoqSJBzBMTzh4icn4nJ8&r=EMs3TstxaeOnEPD9tc-nSZHH-EgapwHHrT3fIDi7EyI&m=e8JRdydw4kRm2femqX5w0CLjAVtUf0m5D-mY4NEaO9c&s=8bTA19scFfoY-W1cBaqMGwTeBJIRioAAcu83zOpanf0&e=)  
 >>  
 >> -----Original Message-----  
 >> From: Timothy Lee <timothy.lee@arstechnica.com>  
 >> Sent: Tuesday, July 10, 2018 10:15 AM  
 >> To: James Gleeson <James.Gleeson@spacex.com>  
 >> Subject: Re: Thailand story  
 >>  
 >> Hi James!  
 >>  
 >> Thanks for getting in touch. I'd be open to adding a comment from Thailand's prime minister if it adds to the story. However, what he says here doesn't seem very different from Narongsak Osatanakorn's comments.  
 >>  
 >> Also, a practical problem: I don't have a way to independently verify this transcript, and I assume you don't want me to attribute the translation to SpaceX.  
 >>  
 >> -Tim  
 >>  
 >>> On Jul 10, 2018, at 9:45 AM, James Gleeson <James.Gleeson@spacex.com> wrote:  
 >>>  
 >>> Hi Timothy,  
 >>>  
 >>> Great news this morning!  
 >>>  
 >>> Off the record, I saw your story included a comment from the former governor of the Chiang Rai province, so I wanted to make sure you saw the comments by the Prime Minister - which would be helpful context to include as well. Below is a link to video of the press conference and an unofficial transcript. Hopefully this helps, and let us know if you're able to update your article.

>>>  
>>> Thanks!  
>>>  
>>> --  
>>>  
>>> https://urldefense.proofpoint.com/v2/url?u=https-  
3A\_www.facebook.com\_thestandardth\_videos\_1910886279204255\_&d=DwIGaQ&c=m5pJjvhoJ8du6Q8es33zcr1MoqSJbZBMtZ  
h4icn4nJ8&r=EMs3TstxaeOnEPD9tc-nSZHH-EgapwHHRt3fIDi7EyI&m=e8JRdydw4kRm2femqX5wOCLjAVtUf0m5D-  
mY4NEa09c&s=Jq\_v89K1K19mjmg9AOV9HqnoDupw35BvH-yq5mVqk9w&e=  
>>>  
>>> Unofficial translation of segments of PM's press briefing, 10 July 2018  
>>>  
>>> With regards to my meeting with Mr. Elon Musk last night, I have to say that I liked and admired him  
from the very first day that he tweeted his message with sincerity. He's a young successful man. He has  
businesses in satellites, aerospace, drilling and many other fields. He offered us assistance. He tweeted  
that he's ready to help if Thailand asked for assistance. He's ready to render support. He also tweeted  
that he admired our work, that we are in control of the situation, and that were helping the people  
efficiently. In the meantime, he's ready to help in all aspects. While returning (to Bangkok) last night,  
I met him in person, together with his staff, around 5 people. His private plane flew directly from the  
US to Chiang Rai, and took around 17 hours. I was returning (from my mission in Chiang Rai). We talked at  
the airport. We shook hands and greeted each other. I informed him about what we are doing in Thailand.  
With regards to the (cave) problem, he said he had his technology. He said that he wasn't fully aware  
about the conditions in Thailand and had never seen caves like these. He's ready to help but might have  
to adjust the tools somehow, to suit the area. The tools he brought are all useful. I saw that the  
capsul he showed, which can be used for people trapped in caves and rivers. We'll have to see how we can  
use this. He understands everything. He listened to my explanation. Last night he went deep into the  
caves/chambers. I believe that he probably had more ideas, innovations and products to be suggested. I  
asked him if he can help Thailand acquire more tools for rescue operations, but actually not just  
Thailand, but for ASEAN, as we share the same topography. I also said that Thailand stands ready to  
support any entrepreneurial interests, because his company is a big company and prominent in many areas.  
I also informed him about the EEC, connectivity, innovation, and Thailand's digital transformation. He  
said he was interested. He mentioned he had to go to China on a business trip, but if he has the time he  
might come back. For the equipment he kindly gave us, he left it for us to study and use. We'll see how  
we can make use of this. When you have a useful product, it might also be useful for another purpose as  
well. So there is always the possibility of it being modified and adjusted for future use. This is  
useful. I think it's very useful for me and for Thailand because we need to consider how to deal with  
other disasters in the future, not only the one we are facing now. It may be useful for other disasters,  
climate change, flooding, or landslides. I think of him as a friend. When he proposed to help Thailand,  
I told him that I stand ready to welcome him and for him to think of Thailand as his second home. He was  
positive. I invited him to come to Thailand, and possibly visit the EEC. We are preparing to build our  
satellites and he has his satellite business, and communications [technology]. Why don't we seek  
cooperation with him?

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**From:** Sam Teller [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=3BBD889935194BE5BF3603B89339F2AE-SAM TELLER]  
**Sent:** 7/10/2018 8:41:50 AM  
**To:** Jehn Balajadia [jehn@boringcompany.com]  
**BCC:** Anna.Jones@bbc.co.uk; Heather.Chen@bbc.co.uk; Andreas.Illmer@bbc.co.uk; amanda.hodge@theaustralian.com.au; matthew.weaver@theguardian.com; Helen.davidson@theguardian.com; rperper@businessinsider.com; Michael.safi@theguardian.com; Sarah McBride [smcbride24@bloomberg.net]; Ryan.Browne@nbcuni.com; media@spacex.com; media@boringcompany.com; florence.li@spacex.com; Steve Davis [steve@spacex.com]; Press [press@tesla.com]  
**Subject:** Re: Comments from Thai Prime Minister

Also see Elon's tweets like <https://twitter.com/elonmusk/status/1016684366083190785?s=21> which show that divers who were actually in the cave believed the mini-sub was viable.

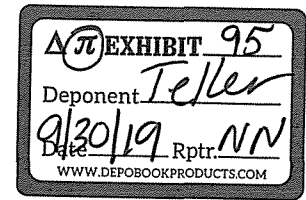
This is on the record from a Boring Company spokesman (\*not me by name\*):

Multiple divers involved with the rescue said the mini-sub design was viable, and their feedback directly informed our engineering and testing.

## **EXHIBIT 51**

## **EXHIBIT 51**

From: Martin Schmidbaur [mschmidbaur@milltownpartners.com]  
 Sent: 8/24/2018 10:33:06 AM  
 To: Sam Teller (SpaceX) [steller@spacex.com]; DL-CommsManagers [dl-commsmanagers@tesla.com]; Shivon Zilis [shivon@tesla.com]; Sarah O'Brien [sobrien@tesla.com]; media@spacex.com; Dave Arnold [dwarnold@tesla.com]  
 CC: Paddy Harverson [pharverson@milltownpartners.com]; Freddie Williams [fwilliams@milltownpartners.com]; Fred Stephens [fstephens@milltownpartners.com]; Trent Olsen [tolsen@milltownpartners.com]  
 Subject: UK/European Media Intelligence - Milltown Partners - 24 August 2018



Dear all,

As ever, please see for our weekly UK/European media intelligence note below.

**ELON 'STRETCHED TOO THIN'.** More so than in the wake of previous 'sleeping in the factory' tweets, the New York Times interview and Arianna Huffington's open letter drove significant media attention on whether Elon is physically and mentally fit to lead. Despite nods to the interview as 'humanising', Elon's work-life balance was widely criticised in the media, with warnings of his "*unstable condition*" (Spiegel; L'Usine Nouvelle), "*career burnout*" (The Times) and "*sleepwalking into disaster*" (Telegraph; see also The Guardian; FAZ). Tech publications like Gruenderszene, defending Elon's work ethic in arguing that "*normal people don't bring about a revolution*," remained the exception. In the overall coverage, two themes stood out:

-- **Investor concerns.** Commentary on Tesla's stock price movement explicitly linked last Friday's drop to concerns for Elon's health which knocked investor confidence (BBC; Handelsblatt; La Tribune).

-- **Hunt for Tesla's Shotwell.** While we have seen calls for a new top executive at Tesla before, the rumour mill has been particularly intense this week. Familiar comparisons with Gwynne's important role at SpaceX came alongside widespread speculation that Sheryl Sandberg might be tapped for a role at Tesla (Financial Times; Manager Magazin; Handelsblatt; Le Figaro). A Financial Times editorial argued a strong COO would be "*freeing Mr Musk up for his best use as a visionary, innovator and strategist for the brand*".

*Milltown View: Let the media frenzy run its course, and be prepared to explain a long-term solution (even if that's the status quo). Seeing Elon's relatively tempered response to Huffington already being misconstrued as aggressive, there's little to gain past the NYT interview in engaging speculation about his well being and ability to lead except to correct serious untruths. Rather, shareholders and other stakeholders will be most reassured by demonstrations Elon and Tesla's board are willing to take a sound course of action with regards to leadership that secures the company's future.*

**TESLA FUNDING - APPLE STEPPING UP?** Amidst reports PIF could invest \$1bn in Tesla rival Lucid (The Telegraph; Manager Magazin; Les Echos) and a second slide in Tesla's share price after JP Morgan slashed their price target (BBC; Manager Magazin; Le Figaro), helpful speculation surfaced that Apple could deploy its pile of cash to delist Tesla. While framing Apple as a potential "*saviour*" for Tesla, financial and business commentators were quick to point out that this is an opportune moment for a cash-rich company like Apple (or Alphabet) to invest Tesla's brand (Handelsblatt; see also Finanzen; Bild).

**AZEALIA BANKS' CLAIMS & BREAKUP WITH GRIMES.** Coupled with the NYT interview, Azealia Banks' latest '*bizarre*' rant claiming Elon's lawyer has her phone to 'delete evidence', prompted further interest in the saga of the past two weeks (Daily Mail; Bild). The Telegraph even suggested that Banks could play an "*inherently comedic*" role in an SEC investigation. Looking more closely at his personal life (and Twitter), some European publications also discussed Elon's rumoured breakup with Grimes (Metro; N-TV).

**MODEL 3 ISSUES IN FOCUS IN GERMANY.** While German national Welt reported on a 'disappointing' and 'dangerous' Model 3 test drive, Focus claimed a scoop on a Model 3 teardown commissioned by UBS analysts: while not all bad, their report alleges serious construction and assembly issues (including missing

screws and parts). Separately Manager Magazin took a clue from Business Insider in reporting on Tesla's scramble to meet Model 3 production targets in June.

**BATTERIES - COBALT.** A Financial Times 'Big Read' investigated the problematic supply chain around cobalt and battery R&D. Tesla is well-positioned in the piece for having stimulated demand for EVs all while having significantly decreased use of cobalt - with zero in sight.

**AK-47 TESLA.** Beyond the mainstream focus on Elon's ability to lead, Kalashnikov's bid to enter the EV race - framed as "*Russia's answer to Tesla*" (BBC) - dominated the social media conversation this week (The Guardian; Le Figaro; DW).

--- ends ---

With best wishes from London,

Martin

On 17 August 2018 at 19:19, Trent Olsen <[tolsen@milltownpartners.com](mailto:tolsen@milltownpartners.com)> wrote:  
Dear all,

Please find this week's UK/European media intelligence note below:

**DEFINE 'SECURED' - SEC INQUIRY & SHAREHOLDER LAWSUITS.** The general consensus in Europe this week is Elon and Tesla are in 'damage control' (Financial Times; Handelsblatt). While "*unhappy investors*" making good on threats to sue got traction (BBC; Numerama), there was more on the SEC inquiry as reports of subpoenas and a possible formal investigation became the focal point of coverage (Daily Mail; Les Echos; Handelsblatt). Typical snark from FT Alphaville hazarded a guess, "*a strong expression of verbal support is not quite the same as a legal commitment*" (see also Handelsblatt).

-- Relatedly, we saw lots of speculation whether Elon can pull it off, and who could fund it (La Tribune; Manager Magazin). The Economist's take was sceptical, calling it "*a sabbatical from reality*", yet credits Elon with setting the standard for attracting big investments in innovation. The suggestion that Tesla could be taken private has been afforded credibility thanks to confirmation players like Goldman Sachs working on the proposal (Financial Times), leading the FT's Richard Waters to conclude "*the private markets look ready for a transformative deal*".

-- For its part, the Financial Times continued a self-congratulatory run of coverage after Elon "*effectively confirmed*" its Saudi report led to the take-private tweet (FT Due Diligence).

**FT PUTS TESLA BOARD IN THE SPOTLIGHT.** There was mainstream interest in the board's new take-private committee (BBC; Le Figaro), and commentators asked if they're willing to 'rein in' Elon. The Financial Times put corporate governance under the microscope, suggesting the board is overly-dominated by Elon (see also FT Due Diligence). Unhelpfully, an FT Opinion piece accused Elon of trying to go private at any cost, echoing last week's FT Lex comparison to Uber, and there is widespread suspicion he's trying to evade scrutiny, seeking "*a blank cheque and unlimited time*" (The Telegraph) or even just 'bluffing' (Fool.de).

**EX-EMPLOYEES ADD TO TESLA'S 'LEGAL TROUBLE'**, which risks becoming a broader narrative with continued interest in alleged malpractice. However, Martin Tripp's 'whistleblowing' content dump, and Karl Hansen's SEC complaint of 'wiretapping' was overshadowed by the market manipulation inquiry (Financial Times; Finanzen; L'Usine Nouvelle).

**ELON'S NEW YORK TIMES INTERVIEW** was reported in Europe overnight, with reaction rolling in late



Friday. It particularly focused on investors' concerns and the possibility of a deputy at Tesla ([BBC](#); [Les Echos](#); [Handelsblatt](#)). Speculative follow-up pieces are emerging about Elon's personal and professional life, and whether it could impact Tesla ([The Telegraph](#); [The Times](#); [Bild](#)).

**MODEL 3 'SITUATION IS IMPROVING'**. Writing in [FT Alphaville](#), Peter Campbell reports the helpfully-timed conclusions of Evercore ISI, London-based auto analysts who visited Fremont. Despite some "*teething problems*", production exceeded many of the analysts' expectations, including quality checks.

**NIO IPO**. The irony of "*China's Tesla*" filing to go public while Elon's proposing to get Tesla out didn't go unnoticed ([The Telegraph](#); [Le Point](#)) -- "*Musk wannabes are as common in China as Elvis impersonators in Las Vegas*" ([FT Lex](#)).

**AZEALIA BANKS' 'BIZARRE' TIRADE** against Elon was written-off as unhinged with papers calling it "*lurid*" and "*vicious*", but widely covered for entertainment value ([The Times](#); [The Independent](#)). Unfortunately, some tabloids revisited tosh about Elon attending Silicon Valley parties ([Daily Mail](#)).

--- ends ---

Have a great weekend,  
Trent

On 10 August 2018 at 18:24, Trent Olsen <[tolsen@milltownpartners.com](mailto:tolsen@milltownpartners.com)> wrote:  
Dear all,

Please find this week's UK/European media intelligence note below:

**'CONSIDERING TAKING TESLA PRIVATE'** was almost universally dubbed Elon's "*biggest social media bombshell yet*" ([The Telegraph](#)). The tweet that shook Wall Street and kept all eyes on Tesla throughout the week provoked mixed reaction in European media, arguably generating more questions than answers:

-- **Little doubt there's a case for taking Tesla private, questions over feasibility** ([The Telegraph](#); [Les Echos](#); [DW](#)). Though critics suggested the proposal could distract from Tesla's 'real issues' ([The Guardian](#); [Handelsblatt](#)), top-tier analysis honed in on the financial realities and drew comparisons to Dell's debt and cash-flow before delisting ([Financial Times](#); [Handelsblatt](#)). In much of the coverage, we also still see a lack of clarity and speculation around potential buyers and speculation. As part of the cycle, we have seen broad acknowledgement of the pervasive short-selling practices affecting Tesla on Wall Street ([The Telegraph](#); [WirtschaftsWoche](#); [Les Echos](#)).

-- **Trolling short-sellers?** The [Financial Times](#)' Richard Waters asked if Elon was "*back to his old passive-aggressive tricks, taunting short-sellers*" (see also [L'Usine Nouvelle](#)). Relatedly, Elon's earlier Hitler *parody* retweet mocking shorters had the UK's [Daily Mail](#) crying "*hilarious*" while Germany's [ARD](#) (unsurprisingly) found it distasteful (see also [The Times](#)).

-- **Brinkmanship and questions over legality**. Dissecting Elon's tweet and questioning the implicit promises, the [Financial Times](#) reflected prolific commentary accusing Elon of being "*excessively high-handed*" in making a "*pre-emptive declaration*" (see also [The Times](#), [BBC](#)). That said, coverage of potential legal challenges and the initial SEC inquiries remained relatively muted, considering the stakes ([Challenges](#); [Manager Magazin](#)) -- though another [FT Lex](#) piece suggested Elon's nonchalance about proper legal procedure constitutes a serious hurdle to achieving his ambitions.

*Milltown View: Irrespective of Elon's motives for announcing his plan on Twitter, our reading is that the ensuing 'information vacuum' means media spend the first part of the cycle focused on process, rather than*

*more interesting and substantive issues around taking Tesla private. Similarly, as media scramble for insight from potential validators (board members, investors, additional Tesla spokespeople), the pressure to publish in the moment has prompted coverage that fixated unhelpfully on the stock price developments in the short-term or the confusion over the means of communications in itself.*

**DOUG FIELD RETURNS TO APPLE.** Reports that Field has rejoined Apple mostly focused on the company's secretive automotive plans, but there was some familiar replay of Tesla's reorganisation and the 'fight' for talent between the companies, including Elon's previous characterisation of Apple as a "*Tesla graveyard*" (Financial Times; Telegraph; Les Echos).

**BLOCK 5 RE-LAUNCHED.** While the increasing frequency of Falcon 9 launches continues to dampen media enthusiasm, a few 'usual suspects' reported on the first Block 5 reuse as a milestone, and applauded SpaceX's third launch in 16 days and 15th of the year (L'Usine Nouvelle; Daily Mail).

**THE 'ESSEX ELON MUSK'** -- Asher Bennett, a UK entrepreneur building electric trucks -- continues to be the subject of a low-level but constant trickle of media attention in the UK. Most recently, The Times reported Bennett and his company Tevva are in a 'David v Goliath' battle against Tesla.

--- ends ---

Have a great weekend,  
Trent

On 3 August 2018 at 15:54, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:  
Good morning all,

Please find our weekly UK/European media intelligence note below. As ever, if you have any thoughts or feedback on the email, please do let us know.

**TOWARDS 'TURNING A CORNER' - TESLA EARNINGS.** Though Tesla's upbeat results got mixed reviews, Elon was widely credited for listening to investors.

--- Media hyped the call as an "*almighty showdown*" between Wall Street and Elon (The Times), who risks "*steering Tesla off the road*" according to The Guardian. However, Elon's display of humility disarmed critics and reassured investors, with his apology taken at face-value (The Times; Les Echos), even if he will need to demonstrate temperance and composure in the long-term (Les Echos).

--- While many headlines underscored continued losses, and newspapers reminded readers that Tesla has a long way to go to match incumbents (FT Lex; Handelsblatt), we saw a notable shift of tone in the coverage (Financial Times; Welt). The FT observed a "*sense of broader renewed faith in a company often caught between strongly-held views of bulls and short-selling bears*".

--- Following the results, the Financial Times was among those to put Tesla's short-sellers on the spot: Greenlight Capital's David Einhorn had some explaining to do about his second-biggest losing stock (see also The Telegraph; Finanzen).

*Insider View, Emily Nicolle, Tech Reporter, City AM: Ahead of the earnings report, we met with London business paper City AM's Tech Reporter. On the testimony of analysts, City AM is very sceptical of Tesla's near-term financial target, but might reconsider their position if the 30k Model 3 target is met. Given recent events, there is also an internal debate at the paper over whether Elon is an asset or liability for the company. This week's positive noise signalled progress towards convincing sceptics on both fronts.*

**'DANCING FOR TESLA' - GIGAFACTORY IN GERMANY?** German media were abuzz following the Wall Street Journal report that Tesla continues to explore Gigafactory sites in Europe (e.g. Handelsblatt, Tagesspiegel). In Germany alone, we've seen hundreds of articles in national, trade and local media, with many

embedding Elon's tweet that "*Germany is a leading choice for Europe*". While some critics reference the level of public support Elon got for the Nevada Gigafactory by making states "*dance for Tesla*" (FAZ), optimism and excitement prevailed, with many outlets referencing Tesla's existing German manufacturing base in Prüm (Autobild, Welt, Volksfreund). The story continued to build throughout the week, as the southern industrial state of Bavaria also expressed interest in a bid for the Gigafactory (e.g. Automobilwoche).

*Insider View, Editor-in-chief, German automotive trade magazine: This editor confirmed to us that German policymakers are more than eager to attract an investment from Tesla in light of an ongoing perception that Germany 'lags behind' in the EV market. An investment would confer 'bragging rights' onto the local government and as well as reinforcing a national narrative that Germany still has a role to play in the global auto market. German carmakers are nonchalant about the prospect of a Gigafactory in Germany, because many of them still assume they are more than capable of competing with Tesla. At the same time, Tesla is definitely seen as featuring some smart, cutting-edge technology and some local players along the automotive supply chain would probably be interested in teaming up with Tesla, especially in the battery segment.*

**TRIPP HAZARD.** There's a simmering interest in Tesla's ongoing lawsuits that threaten to position the brand as typical 'Corporate America' in Europe. FT Alphaville took aim at Tesla's alleged handling of the Martin Tripp case, fighting Tripp's corner on the countersuit and suggestion Tesla had "*creepy*" insight into his whereabouts (see also The Guardian). Unhelpfully, the BBC's reporting on the Tripp and Solarcity wrongful dismissal cases was widely shared on social media (see also Manager Magazin).

**TESLA SURFBOARDS** made waves in the media after showing up on eBay for \$5,000 -- originally selling out at \$1,500, and customised to fit in all Teslas (Daily Mail; Finanzen). Predictably, some called Tesla out for yet another "*marketing gag*" (FAZ), but covered the story nonetheless.

**OPENAI'S ROBOTIC HAND** stunned European technology commentators as a "breakthrough" in machine-learning Elon continues to benefit from positive coverage of OpenAI's work where he is referenced as the founder and driving force (The Telegraph).

**KNIGHT RIDER NOSTALGIA** came through in some German and French tech blogs and car trades excited about the prospect of an improved AI-interface in Tesla cars (e.g. Numerama, Futurezone, AutoRevue), but otherwise coverage of Elon's tweets on the subject was drowned out by Tesla earnings.

--- ends ---

With best wishes from heatwave-suffering London,

Martin & team

On 27 July 2018 at 18:06, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:  
Dear all,

Sharing our UK/European media intelligence note below.

**ZUCK v ELON: IN SPACE.** Facebook's reveal of a new satellite programme played into the media narrative of big tech's intensifying fight to extend global broadband access (Heise; Les Echos), with SpaceX and Starlink widely referenced. Commentators suggested that Facebook was motivated by a genuine concern to improve connectivity (Les Echos), but questioned whether the programme was as technically advanced as that of SpaceX (The Telegraph). Few went as far as the Daily Mail in positioning Facebook's move as a "*major threat*" to SpaceX.

-- Separately, sparse coverage of SpaceX's Iridium and Telesat launches continues to suggest that the

increasingly routine nature of the missions has reduced media interest, even though some outlets called out the difficult conditions ("*worst-ever weather*") for SpaceX on 25 July (Les Echos print, Daily Mail).

**MODEL 3 CANCELLATIONS AND MORE TESLA FUD.** Headlines of the allegation that cancellations are outstripping new orders dragged on this week, driven by interest in the to and fro of analysts' and Tesla's competing figures. There were, however, some helpful conclusions:

-- **Critics sought to stoke drama:** Elon's denial has him "*embroiled in a fresh fight with Wall Street*" (The Times), over refunds that "*could trigger domino effect*" (Finanzen), as the patience of Tesla fans' waiting for Model 3 is exhausted (L'Opinion). A damaging Frankfurter Allgemeine Zeitung piece suggested Elon and Tesla either released wrong or misleading information about Model 3 delivery timeframes to obscure the full picture - "*something Tesla has previously been accused of*" -- or otherwise customers simply aren't converting reservations to orders.

-- **Double-edged sword.** In the context of Model 3 orders, we frequently see the fine line between Tesla getting credit for transforming the car industry and yet being threatened by cut-throat competition from both incumbents and pure-EV players. Germany's Spiegel and Focus both reference Model 3 order cancellations in respective features on e.Go Mobile and BYD ("*like Tesla, but profitable*"), while the UK's The Times cites European carmakers' plans for an EV charging network to suggest "big players have effectively ganged up on Musk", who nonetheless "deserves much credit for this rapid social-technological change."

*Milltown View: As we expect to see media closely follow Tesla's competition, we need a clear narrative from Elon over the coming months to remind people that a) the goal for Tesla always has been to catalyse more innovation in EVs and in fact we welcome it, b) that nonetheless there remains substantial consumer scepticism which needs to be overcome (a subtle nod to make the case for subsidies and incentives), while c) Tesla has built out significant competitive advantages such as investing in its supercharger network and an integrated offering of solutions for both energy generation and storage.*

**TESLA REQUESTING SUPPLIER REFUNDS** was called out by some critics as an "embarrassing" memo (Guardian) signalling that Tesla was "*begging for cash*" (Heise), although Tesla's measured response and statement helped keep mainstream reporting relatively fair. The Financial Times' coverage of the issue was balanced in suggesting that wrangling over supply chain costs is "not uncommon" and quoting analysts saying that the significance was being exaggerated.

**DESPITE EVERYTHING, FT SEES A CHANCE FOR TESLA.** In further debate on Tesla's financial health, two pieces in the Financial Times were notably optimistic on Tesla's long-term prospects. Discussing the rise of credit default swaps for Tesla bonds, the Financial Times quoted analysts cautioning "against treating the CDS moves as indicative of widespread concern." Second, even FT Alphaville's Dan McCrum conceded the value of Tesla's brand would prevent it from bankruptcy in the long term.

**THE SPACEX HYPERLOOP POD COMPETITION** attracted significant press attention in Europe. In the coverage, Elon is seen to be driving innovation in engineering, even as a champion from the sidelines of a space he's chosen not to own (BBC; Numerama; Heise). The teams clearly are a source of regional pride, as seen from the levels of local coverage in German and Swiss media (Wired.de via Gruenderszene; Bild; Der Bund via MSN, WirtschaftsWoche).

**UK MEDIA PICK ON ELON AND GRIMES**, photographed on the sidelines of the SpaceX Hyperloop competition. Gossip-prone tabloids including the UK's Metro and Daily Mail noted that some mistook Grimes for Elon's daughter and trawled Twitter posts in an effort to point out the age gap between Elon and Grimes.

--- ends ---



Best wishes for the weekend,

Martin & team

On 20 July 2018 at 18:19, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:

Dear all,

Please find this week's UK/European media intelligence note below:

**UNSWORTH ATTACK.** Elon's personal attack on British cave rescuer Vern Unsworth generated exceptionally negative European coverage this week. Six takeouts:

- Before Sunday night, most of those critical of Elon's intervention in the Thai rescue had taken the authenticity of his intention at face value.
- But Elon's disproportionate response to Unsworth's comment was met with universal condemnation, and reinforced longstanding perceptions of him as 'thin-skinned' and egotistical, epitomising the 'bro culture' of Silicon Valley ([FT View](#); [Daily Mail](#); [Gruenderszene](#)).
- The tweet also prompted some to accuse Elon of racism ([Daily Mail](#)), although this take was not as widespread as might have been expected.
- The scandal cut right through to mainstream consumer awareness in Europe to a degree we have rarely seen in coverage of Elon before.
- Predictably, criticism spilled over into scrutiny of Tesla's stock price ([The Guardian](#); [Le Monde](#)), and Elon's leadership of his companies ([La Tribune](#); [Spiegel](#)).
- While the eventual apology landed with most media, it was painstakingly dissected by [Wired](#) as a 'non-apology', painting Elon as the victim, and only reluctantly taking responsibility. The episode is likely to linger as a central pillar of the case against Elon for those seeking to build one.

*Milltown View: Elon is best positioned as David fighting Goliaths: incumbent car companies, Presidents, even (to a lesser extent) large media organisations. As the challenger, he is given more license to operate on the edge of acceptability. An attack on an individual like Unsworth flips this dynamic, instantly casting him as the big bad tech executive with no regard for the regular people.*

*Equally damagingly, the use of twitter to pick angry fights with individuals risks reinforcing two unhelpful perceptions: a) that Elon is cracking under the pressure of Tesla's production challenges; and b) that he is not mature enough to lead the company without more 'adult' supervision.*

**GOP PAC DONATION.** This week's allegations spurred accusations of hypocrisy in Europe, where the widespread toxicity of Trump and the Republican Party tarnishes Elon by pure association ([Daily Mail](#)). A conspiratorial [FT Alphaville](#) suggested Elon's Unsworth attack was intended to distract from the FEC filing.

**MUNRO NOW APPLAUDS MODEL 3.** Sandy Munro & Associates' u-turn on Model 3 -- surprised by design features and profit margin -- didn't cut through the noise in top-tier UK and French media. There was limited pickup in Germany; [Fool.de](#) argued the findings confirm German carmakers should be worried.

**TESLA v GERMANY.** [Welt](#) reports Tesla is suing the German government in the dispute over Model S subsidies, suddenly revoked last year. While Tesla promised Model S owners they won't be affected, [Welt](#) concludes refunding customers €2m wouldn't hit Tesla too hard whatever the outcome.

**FUTURE OF LIFE PLEDGE.** Ahead of the UN meeting on lethal autonomous weapons next month, Elon was well-positioned in coverage of the Future of Life open letter as a leading tech figure and outspoken advocate of the dangers of AI (Daily Mail; Le Monde). To some extent this coverage was drowned out by fallout from the Unsworth scandal and Google's Android fine dominating headlines.

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On Fri, 13 Jul 2018 at 18:36, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:

Dear all,

As ever, please see below for our UK/European media intelligence summary.

**THAI RESCUE: ELON THE ENGINEER VS ELON THE PUBLICITY PRO.** Coverage of Elon's intervention in the Thai cave rescue started out overwhelmingly positive, but turned sour over the course of the week -- breaking down into two familiar camps:

-- **A reminder of Elon's engineering credentials.** The visuals of the sub being tested, and Elon's public discussion of innovative technical solutions meant that early coverage of the cave rescue strongly played into the perception of Elon as an engineer at heart and emphasised the excellence of his engineering teams (AFP via The Telegraph, Numerama). Much like WIRED's US coverage, the UK's Telegraph fought Elon's corner, detailing how he put his companies' technology and ingenuity into action in the face of "*increasingly desperate [rescue] efforts*", while Numerama picked up on the trending #FixEverythingElon hashtag (see also The Guardian print; L'Opinion; Le Point).

-- **The cynics take over.** Unsurprisingly, commentators both on social media and in the press took swipes at Elon's "*grandstanding*" (Guardian) and "*macho*" rescue efforts (Financial Times), arguing he distracted from the rescuers' achievements (see also BBC; Welt). Elon's response to the BBC's tweet offered media the chance at another news cycle about Elon defending his motives and inviting comparisons to other recent clashes with the press (e.g. The Times). In an attempt at a balanced summary of Elon's impact, the Financial Times' Gillian Tett argued Elon "*misstepped*" in Thailand, but he "*remains broadly a force for good.*"

**SHANGHAI SUCCESS.** Despite a week heaving with coverage of Elon, the announcement of a new wholly-owned Tesla factory in Shanghai received significant attention, boosted by the well-publicised Asia trip and brewing trade war. Various described as "*groundbreaking*" (Financial Times) or a "*great leap forward*" (Les Echos), the deal was generally portrayed as a strategic advantage for Tesla (Manager Magazin). Perfectly timed to coincide with coverage of China's 25% rise in retaliatory tariffs -- hitting Tesla with a \$20k price hike -- Elon was credited for moving quickly to capitalise on the country's foreign ownership rule change to double Tesla's future production (Guardian; Handelsblatt). FT Alphaville pointed out Gigafactory 3 projections for 500k cars per year is a standard aspirational figure given by carmakers, and seemingly delighted at ending on a sardonic comment from Tesla congratulating the paper on its "*500,000th negative article about Tesla! Very impressive!*"

**TESLA VS NORWEGIAN TRANSPORT MINISTRY.** In the wake of reports about consumer complaints by the Norwegian Consumer Council (NCC), Reuters quoted the Norwegian Transport Ministry pushing back against earlier claims by Elon, saying Tesla had not yet filed an application for the mobile service vans he hinted at. Germany's Finanzen also revisited the issue but focused on Tesla's efforts at resolving customer service challenges in Norway.

**TESLA'S US SUBSIDIES.** Bittersweet news with The Telegraph reporting a '*bump in the road*' for Tesla as the first company to hit the 200k sales threshold, which will see subsidies cut from next January.

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Best wishes for the weekend,

Martin

On 6 July 2018 at 17:57, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:

Dear all,

Please find this week's UK/European media intelligence note below.

**“A REAL CAR COMPANY”.** There was no hiatus from tough media scrutiny following Monday’s announcement that Tesla had hit a new production high. While some applauded the milestone, most followed quickly with previous missed targets and precarious financials (WirtschaftsWoche; Daily Telegraph; BBC). Media were left asking three questions:

-- **How significant is the 5k milestone?** Many compared Tesla’s production numbers with those of its global incumbent competitors. Media across the spectrum delighted in Ford EMEA CEO’s snarky tweet, while Focus pointed out that if current production is sustained, Tesla will make as many cars this month as VW does in a day. Spiegel gave Elon credit for transforming the way publics everywhere think about electric cars, but argued that Tesla can’t afford to stall on Model 3 with incumbents catching up.

-- **Are production increases sustainable?** Sceptics questioned whether Tesla can continue to scale manufacturing when ‘unconventional’ and ‘extraordinary’ measures were needed to meet the target. The ‘improvised’ tent in particular stoked doubts about whether the company can boost or even maintain current levels of production in the near term (Financial Times; Manager Magazin; Welt). Automation and efficiency were another focus, and Les Echos accused Elon of arrogance for his earlier claims of a revolution in manufacturing.

-- **To what extent has Tesla been ‘cutting corners’?** Media speculated on the implications of intense pressure for working conditions and production quality. Amid criticism of long hours that reportedly turned Fremont into ‘hell’ (Numerama; Reuters via Handelsblatt), Elon was portrayed as stressed and frayed (Le Monde; Bild). Helpfully, we saw surprisingly little pickup of the specific allegation that brake testing had been suspended (Finanzen; Daily Telegraph), although wider concerns around production quality did feature in reporting (Daily Mail).

**DOUG FIELD’S DEPARTURE.** Confirmation that Doug Field won't return to Tesla triggered commentary on the turnover of leadership, but was largely treated as a footnote to the week’s other events (Financial Times; Handelsblatt). Some suggested Field had been a primary figure at the company who'd been actively sidelined (Les Echos; Handelsblatt).

**GUARDIAN RESURFACES CRONY CAPITALIST MEME** in two pieces arguing that the Gigafactory is loss-making for Nevada. First, an investigative piece considered the impact on public services and housing, calling the tax breaks ‘corporate welfare’ and concluding the community’s fortunes are dependent on Tesla’s success. Second, a wide-ranging survey assessed government incentives offered to various Big Tech projects, claiming Nevada’s bet on Tesla may never pay off.

**BP IS BUYING CHARGEMASTER**, the UK’s largest charging network, in another sign of Big Oil trying to get ahead of EV disruption. *“We have no doubt that the electric vehicle market is growing and will become a significant part of the transport sector in future”*, a BP spokesperson told the BBC. Shell acquired the European network NewMotion in 2016.

**THAI CAVE RESCUE.** After passing references to Elon's offer of help in reporting about the trapped children this week, confirmation that he is following through and sending Boring engineers to Thailand set off a fresh wave of positive reporting late Friday ([BBC](#); [Daily Telegraph](#); [NTV](#)).

**ELON'S PLAN FOR UK SOLAR FARM,** a rumour Tesla has already denied, was peddled by the major tabloids and widely shared on social media in the UK this week ([Daily Mail](#); [Sun](#); [Metro](#)).

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On Fri, 29 Jun 2018 at 17:36, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:  
Dear all,

As ever, please find this week's weekly UK/European media intelligence note below.

**UK REPORT QUESTIONS TESLA'S ENVIRONMENTAL CREDENTIALS, REDUX.** A UK-focused study of CO2 emissions led to a trickle of negative (and blatantly one-sided) headlines: "*Teslas are not cleaner to run than the average car in the UK*". The Sunday Times' article presented the case made by Engaged Tracking researchers -- that Model S emits more than ICE sedans due to the UK energy grid's reliance on coal and gas (see also [Daily Mail](#)).

*Milltown View #1: Tesla's response, included in the article, was strong in calling out the misleading comparison to cars of different sizes. We suggest in the future also focussing on the bigger-picture energy ecosystem -- the way we generate, store, and consume energy are all necessary to achieve a clean transport system -- rather than narrowly disputing technical claims. Separately, we also have yet to see more rebuttals of this line of argument from third parties. Tesla's long-term ambition should continue to be building up a credible body of third-party supporters to refute inaccuracies and criticism.*

**MORE COMPETITION FOR GERMAN GIGAFACTORY.** Both national and regional papers in Germany have continued to follow up on a potential Gigafactory located in Germany. Interest has been especially high in the states of Rhineland-Palatinate ([Rhein-Zeitung](#)) and Saarland, where the local government leaders wrote a letter to Elon in a bid to emphasise both the automotive and tech credentials of the region ([Saarbrücker Zeitung](#), [Handelsblatt](#); [FAZ](#)).

**"RUDE AWAKENING" FOR GOLDMAN SACHS.** While some business outlets picked up Goldman Sachs' dim prediction ([Les Echos](#)), [Reuters](#) substantiated the claims by quoting Tesla workers saying the Model 3 target will be missed. More helpfully, other outlets ran with the soundbite in Elon's leaked email to staff suggesting Goldman Sachs "*are in for a rude awakening*" ([Bloomberg](#), [Finanzen](#); [Daily Mail](#)). [FT Alphaville](#) focused instead on whether equity traders will track the bond market, leading to another period of volatility for TSLA.

**SOCIAL ENTREPRENEUR.** In another bold show of Tesla charging full speed ahead with self-driving technology despite some public reservations, Elon's teaser of an enhanced Semi 'Mad Max' mode largely played well and without being singled out by AV critics (e.g. [Finanzen](#) via [MSN](#)). The [Daily Mail](#) favourably positioned Elon's engagement with fans on Twitter. Separately, we saw little coverage of Elon's discussion of the Tesla pickup outside of tech and automotive press ([Daily Mail](#)).

*Milltown View #2: Even if initial pickup of the idea has been relatively contained to friendly constituencies, the notion of a "Mad Max" or "Aggressive" driving mode of course has the potential to irk Elon's critics and open an avenue of attack centered on irresponsibility. However, this week again showed Elon is at his best on social media when he's engaging fans around innovative new products.*

**THE 'UNICORN AFFAIR'** drew some unwelcome, if largely harmless, attention late in the week. News of



Tesla's alleged misuse of the image got laughs and some tongue-in-cheek coverage, but Elon's 'angry' response on Twitter provoked more, otherwise unnecessary, reaction ([BBC](#); [Telegraph](#); [Handelsblatt](#), [Vanity Fair FR](#)).

**AD ASTRA 'SECRET SCHOOL' AT SPACEX.** Elon's little-known school for 'child entrepreneurs' in Hawthorne provoked mainstream media interest in Europe following [Ars Technica](#)'s discovery of the 2015 IRS documents. [The Telegraph](#) offered a slightly sceptical take on Elon and one of his "*most secret ventures*" and attempt at educating "*the next generation of child geniuses*". Other reporting positively reflected on Elon pushing the boundaries in yet another sector ([Daily Mail](#); [The Times](#)).

**SPACEX SUCCESS AS ARIANESPACE FALTERS.** We've seen some helpful coverage for SpaceX this week: first, [Les Echos](#) called attention to the first Falcon Heavy contract and Gwynne's thanks for USAF's vote of confidence. Second, Arianespace will reportedly miss this year's launch target, and is shifting focus to Ariane 6 to challenge Falcon 9 (Reuters via [Daily Mail](#); [Le Figaro](#) with AFP). At the time of writing, the [Daily Mail](#) was among the few outlets to report on the payload ("*floating AI brain*") of today's launch of the last Block 4 Falcon 9.

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Our best wishes to the team,

Martin

On 22 June 2018 at 18:31, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:  
All,

Please find this week's UK/European media intelligence note:

**SABOTAGE + PARANOIA.** Tesla's claims of a corporate saboteur piqued interest in European media this week. For most writers, the claims reinforced a culture of blame and finger-pointing, against the backdrop of serious business challenges.

-- **Saboteur or whistleblower?** The [Financial Times](#) doubted the strength of the case against Martin Tripp, arguing it fell "*short of the dark warnings*" outlined in Elon's leaked email, while uncharacteristically opinionated reporting from the [BBC](#)'s Dave Lee discussed "*Musk's fury*" about Tripp's alleged whistleblowing. Predictably, [The Guardian](#) was more sympathetic to Tripp's claims of scapegoating ("*This is obscene ... It feels like I have no rights as a whistleblower*"), while [Manager Magazin](#) focused on the allegation of damaged batteries in light of recent fire safety concerns.

-- **'War on truth'.** Elon's suggestion Big Oil and others were to blame was widely positioned as a distraction or paranoia ([DW](#); [Heise](#)). Even straight reporting that took the allegations at face value pointed to Elon's 'sensitivity' to criticism ([Times](#); [Telegraph](#); [Manager Magazin](#)). [FT Alphaville](#)'s Jamie Powell described Elon's emails as conspiratorial and dismissed his 'fixation' on short-sellers.

**FACTORY 2.0.** Fremont remains under intense media scrutiny, with every twist and turn taken as a signal on Tesla's likelihood of meeting the 5k production target. Elon's third leaked email -- rallying for "*radical improvements*" -- incited further doubts ([Daily Mail](#); [WirtschaftsWoche](#)), as did coverage of the parking lot tent housing a new Model 3 production line ([Spiegel](#); [Manager Magazin](#)). [Focus](#) typifies the response of European media: that Elon's enthusiasm for "*Factory 2.0*" masks increasing desperation.

Taking a step back, we see a growing media consensus that drastic action is needed at Tesla, and deep scepticism of Elon's leadership. This week, [Handelsblatt](#) argued Tesla is coming to a fork: Elon has to get his

house in order and cash burn in check keep investors happy. Similarly, an FT Big Read published late last week amplified critics who say “*Tesla and its chief executive are in danger of unravelling — operationally, financially and psychologically*”. Reinforcing this picture, a WirtschaftsWoche comment piece argues Elon is ‘desperate’ and ‘paranoid’, and that ‘ousting’ him is the only answer to Tesla’s problems.

*Milltown View: while Elon has made efforts to manage media expectations around his ‘overly optimistic’ production targets, the intense focus on Model 3 production presents a major reputation risk. Tesla should look to communicate more medium and long-term objectives, beyond Model 3 targets, in order to mitigate the fallout from falling short.*

**SAFETY SCRUTINY.** Video of a Model S ‘spontaneously’ spewing flames on Santa Monica Blvd caused concern, with mixed reaction to Tesla’s statement and scepticism around the company’s long-term safety record (BBC; AFP via Le Figaro). Whether it was Tesla or the celebrity factor that drove sharing, Finanzen helpfully pointed to Nassim Nicholas Taleb’s tweets outlining the statistical reality: 150-200k vehicle fires a year in the US.

**GERMAN GIGAFACTORY.** Handelsblatt reported excitement among regional leaders in Germany after Elon teased a possible location for the European gigafactory on the German-French border near Benelux. The story picked up widespread coverage in German tech (Wired), automotive (Auto Motor und Sport) and regional press (Saarbrücker Zeitung).

**RISE OF CHINESE SPACE.** The Economist reports that despite the rapid advance of China’s OneSpace, its ambitions are smaller than SpaceX -- “*America’s leading private space company*”. The Daily Telegraph gives Elon credit for inspiring OneSpace and other Chinese startups, LandSpace, LinkSpace, and ExPace.

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On Fri, 15 Jun 2018 at 19:05, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:

Dear all,

As ever, please see below for our weekly UK/European media intelligence note.

**JOB CUTS AND A CHANGE OF TONE.** Coverage of job cuts at Tesla was relatively balanced. Top-tier outlets seized on Elon’s admission that profitability is a “*valid and fair criticism*” (Financial Times; BBC). Some helpfully picked up on Elon’s ongoing reorganisation as a means of keeping the ‘startup culture’ alive, and emphasised fundamentally good relations with employees who believe in Tesla’s mission (Handelsblatt; Manager Magazin; Numerama). Of course, there was some criticism over volatility at Tesla and framing of the cuts as a ‘half-hearted’ recognition of investors’ concerns (The Telegraph; Les Echos; Welt), but the broadly positive reaction was well-summarised by FT Lex: Elon’s “*change of tone matters.*”

**LABOUR RIGHTS.** The NLRB testimony got little pickup (Reuters via Daily Mail) in European media, except in some German titles which tend to follow automotive union debates more closely. Der Spiegel’s critical take suggests the case “*could spell more trouble for Elon*”, and Manager Magazin suggested that Elon doesn’t deal well with dissent. Relatedly, The Guardian ran a thinly-veiled pro-union piece, attacking Elon for ‘broken promises’ towards injured staff, who are portrayed as ‘*paying the price*’ for Elon being overly ambitious.

**ELON SIGNALS CONFIDENCE WITH INVESTMENT.** Elon’s \$25m investment demonstrated his continued commitment to Tesla’s success over-and-above reassuring investors. While media inevitably suggested this was a “*strategic manoeuvre... to show his optimism*” (The Telegraph), most coverage took the signal at face value -- a doubling-down on Tesla (Handelsblatt; Finanzen).

**ELON'S AUTOPILOT PROMISE** to deliver full self-driving capability by August provoked more scrutiny, and some damaging replay of recent accidents (Daily Mail; DPA via WirtschaftsWoche). We saw it framed as Tesla getting ahead of regulators and pushing on despite investigations (Numerama; Bild). The Telegraph asked whether Elon's "controversial driving technology" is "ready for the road."

-- Separately, UK coverage around Autopilot was fueled by a Association of British Insurers' (ABI) report claiming that driver assistance systems present safety risks and shouldn't be "oversold". FT Alphaville followed up on previous criticisms, while also quoting (not unhelpfully) the authors of the ABI report: "[Autopilot is] great! Potentially too good, as it lulls drivers into a false sense of security". A Thatcham Research demonstration for the BBC offered some unhelpful visuals of the weaknesses within the current version of Autopilot.

-- The Telegraph's reporting underscores the Catch-22 for Tesla, given that as a successful first-mover Tesla bears the brunt of criticism on driver-assistance features. Similarly, Tesla's move to increase warning messages was reported to have alienated drivers (Daily Mail).

**MIXED-BAG FT ALPHAVILLE.** Departing from the blog's usual cynicism, Jamie Powell's refreshing takedown of Tesla's cash-burn critics nicely compliments Elon's vision for the company advancing electrification over profits. Using the 19th century railroad boom as a historical analogy, Powell argues that Elon "has succeeded in transforming how the general public perceives electric cars".

*Insider View: Last week Milltown had a one-to-one with Jamie Powell, during which he shared some views on Elon and Tesla (prior to the above piece and job cuts announcement). Powell is particularly interested in Elon's relationship with shareholders and how he disregards normal investor relations practice, citing the recent earnings call. Powell wasn't generally hostile to Elon, and highlighted that a large portion of shareholders still trust him and value the company on different metrics, a belief in Elon and his wider impact.*

**BORING'S FIRST BIG WIN.** The Financial Times argues that the Boring Company Chicago-O'Hare deal "lends credibility to one of Mr Musk's more ambitious ideas" (see also The Times). There's a general sense of surprise the 'newcomer' beat out established players, even though there was some scepticism saying the plans and costs are as yet unproven (Les Echos; Finanzen).

**'NOVELTY' PRODUCT TEASERS** continue to drive coverage of Elon's unique appeal. 'Whimsical' scenes of fans collecting the first batch of the 'Not-A-Flamethrower' got the media's attention, as did Elon's humorous T&C tweets (Guardian; Numerama; Finanzen). Separately, his tweet about a SpaceX package for Roadster created fresh buzz across consumer, tech, and financial titles about whether he's joking or serious (Daily Mail; L'Usine Nouvelle; Finanzen).

--- ends ---

Enjoy your weekend,

Martin & team

On 8 June 2018 at 18:10, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:  
Dear all,

Please find this week's UK/European media intelligence note below:

**TESLA TURNS A CORNER AT AGM.** We saw relatively light European pickup ahead of this week's AGM (Les Echos; Handelsblatt), but the event was widely reported after the fact, with the majority of coverage broadly positive. A few insights:



-- **Media verdict.** Elon's show of humility, passion, and emotional investment in Tesla played well. Several headlines followed The Independent -- "*Elon appears emotional*" -- and emphasised assurances that Tesla has turned a corner after the most "*hellish several months*" (Daily Mail; Handelsblatt). A separate Financial Times op-ed gives Elon credit for listening to shareholders (unlike other Big Techs) but argues he clearly has little appetite for media scrutiny.

-- **Short squeeze.** Business bulletins reported a surge in TSLA stock following "*upbeat targets*" (Financial Times; The Times). The Financial Times' Richard Waters directly attributed the bounce to Elon's "*optimistic*" projections and a new "*calmer*" tone. Finanzen reported analyst estimates that this week's gains may have cost short-sellers \$1bn.

-- **Shareholder intrigue.** Though most reporting cut straight to supermajority support, there was some interest in those who opposed Elon -- in particular the Norwegian SWF and Jing Zhao (Telegraph; Le Figaro). Manager Magazin argued the result was never in question for the simple reason that Tesla wouldn't work without Elon.

-- **Some criticism...** Some German press was more sceptical, spinning familiar lines about Elon being on the defensive (Focus). More pointedly, Welt alleged Elon made false claims about the popularity of German cars at the AGM. Over at FT Alphaville, Alexandra Scaggs posted a long-winded tirade, concluding Elon doesn't have an "*eight-dimensional*" strategy to "*distract investors*" but is instead simply "*self-destructing*".

**CRASH REPORT.** The NTSB's preliminary findings -- suggesting both car and driver were at fault -- received mixed treatment, but as yet there's no significant European coverage (Le Figaro). The Financial Times replayed tensions between Tesla and investigators, while The Independent simply reported the facts, noting that findings confirmed Tesla's earlier statement about the driver's hands being off the wheel. Jemima Kelly at FT Alphaville accused Elon and Tesla of "*misleading*" customers about Autopilot.

**MODEL 3 REFUNDS.** There was surprisingly little interest in Recode's report on Model 3 deposit refunds. The claims made a splash in Manager Magazin, but was followed up by only a few German outlets (Bild).

**CATCH TESLA.** Elon and Tesla continue to get credit for 'forcing the hand' of incumbents on electrification. Daimler's new electric trucks picked up plaudits this week, but WirtschaftsWoche suggests it may be too late to compete with Tesla (see also Reuters via Daily Mail; Les Echos). Elsewhere, JLR's I-Pace got rave reviews (Telegraph, Challenges) and Porsche Mission E Cross Turismo also impressed with performance (SPX via Welt).

**CATCH SPACEX.** Space developments peppered news this week amid a €16bn boost for European space programmes in the 2021-27 EU budget (Politico). Separately, industry players were described as struggling to "*keep up*" with Elon. First, The Telegraph reports Russia is pushing for reusability, but the paper dismisses the plans as "*far behind*" SpaceX. Relatedly, Les Echos called OneSpace the "*Chinese SpaceX*" as Beijing aims to boost private space. Finally, we saw some -- broadly neutral -- reporting of delays to Elon's plans to send tourists around the moon (Daily Mail; Spiegel).

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On 1 June 2018 at 18:36, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:  
Dear all,

Please find this week's UK/European media intelligence note below:

**MODEL 3's GOOD WEEK.** Tesla's rapid response update reversed negative European media sentiment on Model 3 seen last week. Most pieces highlighted commentators' amazement at what were described as



“*unique*” over-the-air updates, and Elon’s constructive appreciation for the critical feedback from Consumer Reports proved highly effective in resetting the tone of reporting (Financial Times; Handelsblatt; Numerama).

To reinforce the turnaround, a widely-shared WirtschaftsWoche piece (tweeted by Elon) reported that German experts dissecting a Model 3 concluded it could realistically be sold at profit for \$28,000. The piece went on to argue Tesla is “*further ahead of the competition than previously anticipated*” in battery technology. Finally, Elon’s tweet that Model 3 would ship to Europe in 2019 got some cut-through in Germany (Heise; DPA via Handelsblatt).

**DAILY WHAT?** We saw surprisingly low pickup of the Daily Beast essay attacking Elon for complicity in what was described as the abusive behaviour of his fans (Metro). Numerama offered among the most extensive analysis, highlighting Elon’s ability to inadvertently mobilise the far-right with a single tweet, and directly criticised his attacks on media.

*Milltown View. Based on this week’s evidence, media hold a higher tolerance for Elon calling out specific articles and journalists than for the kinds of sweeping attacks seen in recent weeks. A core challenge for Elon now is his association with the behaviour of his followers. Any perception that he is fostering, or even tolerating, the trolls will serve to reinforce the longstanding meme that Elon’s values are at odds with the broadly progressive agenda of mainstream European media. Any opportunity to correct that should be grasped with both hands.*

**SUPERCHARGED.** Elon’s Supercharger map got some cut-through in European media, helping to tackle persistent range anxiety. A helpful feature in Le Figaro credited Elon’s forward-thinking for investing in infrastructure to rival ICE alongside development of the cars themselves (see also Daily Mail).

**AV INCIDENT FATIGUE.** In early signs of media fatigue, recent Autopilot incidents drew fewer deep-dives and less hard-cutting criticism than predecessors. Guardian reporting on the latest suspected Autopilot collision with a parked Laguna police cruiser also noted the limitations of competitor systems (e.g. Volvo). We saw few reports of last week’s accident in Greece (L’Usine Nouvelle) or allegations of a crash in Brussels (Bloomberg).

**BRANSON AND BEZOS** may have stolen the space race limelight in European media this week, but Elon and SpaceX continue to be the global benchmark for space innovation. Richard Branson’s claims to be neck-and-neck with Jeff Bezos for the first manned flight (BBC; Les Echos), along with Bezos’ moon-bound ambition both grabbed headlines. But these kinds of innovations are always positioned in reference to Elon’s grand vision (Les Echos; Daily Mail). More broadly, a Financial Times op-ed argues that Washington’s increasing reliance on Silicon Valley to counter China raises serious questions about the concentration of power.

**THE END OF OIL.** According to the Financial Times, big oil is starting to see the writing on the wall. The question is no longer if but when EV and AV technologies will cut them out of transportation altogether, and firms are starting to make longer-term clean investments to prepare for disruption.

-- ends --

On 25 May 2018 at 18:15, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:  
Dear all,

Please find this week's UK/European media intelligence note below.

**CONSUMER REPORTS'** challenging review of Model 3 was widely reported but led to surprisingly little negative commentary. Elon and Tesla's measured response, promises for a software update and no-cost fix if necessary, played well (Manager Magazin; The Times; Reuters via Daily Mail). Characteristically, The Times reflected on Model 3 being simultaneously "*lauded and lambasted*" by investors and media (see below). The most negative coverage -- for example this opinion piece in Handelsblatt -- argued that product defects are more of a concern for the future of the company than its financial precariousness, and replayed a series of difficult weeks for Tesla (BBC).

Separately, an unusually pessimistic Economist leader argued that based on Tesla's current trajectory, a hostile takeover is no longer unimaginable.

**MODEL 3 PERFORMANCE.** Elon's surprise unveiling of plans for a high performance version of Model 3 was the hook for familiar commentary on its centrality to Tesla's future (Guardian; Numerama; Handelsblatt). Many honed in on cost following Elon's admission that the higher-margin Performance was critical given current levels of production, and questioned whether a \$35k offering will ever be feasible (Guardian; Numerama). But reaction was mixed: while WirtschaftsWoche argued delaying affordable cars could cost reservations and increase uncertainty, Finanzen framed the decision as good news for Tesla given investors' enthusiasm and favourable forecasts.

Relatedly, Manager Magazin reported Model 3 registrations in California topping BMW 3-Series and Mercedes C-Class as a significant win in a major, trend-leading market.

**PRAVDA.** Elon's busy week on Twitter attracted a high volume of shallow coverage, as well as unhelpful deeper dive analyses and backlash from influential journalists. Unsurprisingly, the idea of rating media based on trust elicited strong reactions from.... media (The Independent; Les Echos; Welt).

Two key themes to draw out:

-- **Trump's strategy.** Unhelpful comparisons with the President littered headlines this week. The Times criticised Elon's tweets as inexcusable, while a Guardian quiz asked "*Who said it - Donald Trump or Elon Musk?*" (see also Quartz quiz: Elon vs. Kanye); Welt argued that discrediting media would only fuel investors' scepticism. For the most part, Elon's twitter-based defence failed to calm the storm.

-- **Elon's character.** Other analyses went deeper, positioning this week's comments as further evidence of Elon's "[b]rash and blunt" character (The Telegraph). A Times leader called him 'thin-skinned' with a low tolerance for scrutiny. Handelsblatt positioned Elon as under pressure and on the offensive since the analyst call. A handful were more forgiving: "*The best defence is a strong offence*" (Le Figaro).

*Milltown View: While Elon probably has the broad support base to successfully land precise hits on individual journalists and outlets as a last resort, these kinds of broad, non-specific attacks make an enemy of every journalist. That was evidenced this week's by the highly objective BBC's response describing Elon's tweets as a "bitter attack on the press".*

**AUTOPILOT** remained in focus this week. The BBC's Theo Leggett asked 'who's to blame' for self-driving car accidents, singling out semi-autonomous systems for causing confusion. Relatedly, Welt suggested Tesla's safety record was indicative of Tesla owners rather than the cars themselves. Despite this heightened attention, we saw relatively little European pickup of consumer rights groups' letter to the FTC urging an investigation of "deceptive and misleading" advertising of Autopilot (BBC; Reuters via Daily Mail).

**WHO'LL WIN IN CHINA?** Interest keeps growing over the implications for carmakers of China's proposed tariff cuts. Les Echos looked into the benefits for luxury brands, agreeing with others that Tesla

will be a big winner, and DW similarly reports German carmakers are encouraged by the lower import costs. Importantly, Elon's intervention in the debate months ago is still a reference point in reporting on Chinese trade developments (Reuters via Daily Mail).

-- ends --

On 18 May 2018 at 19:32, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:  
Hi all,

As ever, please find our weekly UK/European media intelligence note below.

**TESLA EXECUTIVE DEPARTURES.** Despite a trickle of reports of executive departures over the past months, much of the coverage around leadership changes took Elon's message of a 'reorganisation' at face value (Financial Times; Les Echos; BBC) and pointed to the fact that Elon warned of a shake-up weeks ago. Inevitably, however, some reports framed Doug Field's 'break' and Matthew Schwall's departure as "setbacks" (Reuters; Finanzen). FT Alphaville's typically critical take suggested Elon was not in fact "grabbing the...bull by the horns", but having to rethink Tesla after "the avalanche of executive departures over the last three years". The Daily Mail ran a sensationalist headline connecting Doug Field's leave from Tesla with "concerns of their cars exploding" (see below).

**BATTERY FIRE FEARS.** Reports of recent Tesla battery fires reflect familiar safety concerns, despite receiving limited pickup. First, emergency responders and media were quick to blame the battery in the fatal accident involving a German driver and Model X in Switzerland (DW; DPA via Handelsblatt). Second, tabloids Bild and Daily Mail ran sensationalised reports of the 101 crash battery reigniting and the inability of emergency services to safely dispose of batteries.

On the flip side, while media remain seemingly obsessed with visuals of burnt-out Teslas, we also see equal levels of media appetite for running stories about eye-catching Tesla demonstrations like the Model X towing a Dreamliner (Daily Mail, Krone).

*Milltown View: As Tesla continues to dispel EV 'range anxieties', Elon could take proactive steps to reassure stakeholders of battery safety like the 2013 blog or an awareness/education campaign for emergency responders. Regularly publishing Autopilot safety reports is a good step, but taking a more proactive public position on safe and sustainable battery disposal would be another effective way of building goodwill.*

**AV TECHNOLOGY UNDER ATTACK.** In the wake of several AV related incidents in recent weeks, debate over the safety of AV technology is intensifying in the media. In relation to the Tesla crash in Utah, The Guardian criticised that semi-autonomy can "lull drivers into a false sense of security" (here), arguing Tesla "repeatedly cast blame on the driver" instead of the technology (here). More positively, The Telegraph concluded that "overall the brand's safety record appears to be better than for other manufacturers".

--- Elon's response to the Utah crash was itself heavily scrutinised. Questions over whether Elon's defensive tweet was a "PR stunt" (Bild) and the new NHTSA investigation further fuelled the fire (Guardian, Heise, AFP via Le Figaro, Le Point).

-- Similarly, while European media covered Elon's/Tesla's robust response to the WSJ's report on the use of eye-tracking technology, this provided an unhelpful backdrop to the debate about AV technology (Daily Mail).

-- Separately, DeepMind Founder Demis Hassabis was quoted in British press urging caution on self-driving cars. He focussed his criticism on the hasty roll-out of AV technology with insufficient testing. (The Telegraph; Daily Mail)

**MODEL 3 AND SOROS.** Reuters' report of additional pauses in Model 3 production sparked commentary in several German outlets that investors were spooked again -- fraying nerves about progress on ramping up production and the implications of Doug Field's leave of absence (Finanzen; WirtschaftsWoche; Spiegel).

Other, more helpful news of George Soros' 'bet on Tesla' got a surprising amount of pickup. While largely portrayed as a 'vote of confidence' in Tesla (ARD; Reuters via Daily Mail), FT Alphaville was predictably sceptical about Soros' true motivation.

**TESLA SHANGHAI.** Speculation around Tesla's continued expansion into China followed reports that Tesla registered a new company in Shanghai with plans for a wholly-owned factory in the free-trade zone (Finanzen; AFP via L'Express). Separately, FT Confidential Research suggests there is unlikely to be significant change in Chinese car-buying even if tariffs fall, due to higher import prices and growing confidence in domestic brands.

**BORING FORUM.** The community event drove a significant amount of favourable coverage, even in European media. The Financial Times digs into the importance of the proof of concept and emphasises the synergies between Boring Co and SpaceX, while other European media offered glowing reviews of Elon's charismatic pitch and vision (The Times; Numerama).

--- ends ---

On 11 May 2018 at 18:39, Freddie Williams <[fwilliams@milltownpartners.com](mailto:fwilliams@milltownpartners.com)> wrote:  
Dear all,

Please find this week's UK/European media intelligence note below:

**EARNINGS CALL INTRIGUE CONTINUES.** Elon's social media provocations extended the life of earnings call reporting across Europe, and prompted unhelpful deeper-dive analyses into the state of Tesla.

-- **Elon's share purchase** received some coverage; media focussed on the narrative that Elon is baiting short sellers and throwing money at the problem (Finanzen). Again, Elon's confrontational tweets -- e.g. *"If you're short, I suggest tiptoeing quietly to the exit"* -- may win the praise of fans, but vindicate sceptics who argue he seems increasingly on the defensive.

-- **Buffett.** Inevitably this mini-spat drove significant pickup. While some journalists took the bait, writing serious comparisons positioning Elon at the forefront of the new economy versus Buffett's traditional model, others framed it as another billionaire boys club tiff (Daily Mail; Numerama).

-- **Elon's staying power questioned.** A hard-hitting feature in L'Obs attacked Elon's 'condescending attitude', arguing his position will be untenable if investors aren't satisfied with Model 3 numbers in June. Le Monde ran similar themes -- first analysing recent challenges and familiar criticisms, before zeroing in the idea it is Solar City holding Tesla back. On the topic of Q1, FT Alphaville's take on Tesla's debt was one of the most widely shared stories this week.

**ANTICIPATING TESLA'S AGM.** German media led speculation about possible shareholder drama, following last week's proposal to replace Elon. Welt focused on CtW Investment Group's advice to vote against Kimbal and other directors in a push for 'independent' oversight.

**THE BLOCK 5** Falcon 9 drove favourable coverage ahead of launch later today. Le Figaro concluded this final iteration could revolutionise spaceflight yet again, leading with the hope of massive advances in reusability and Elon's 100-launch prediction (see also Daily Mail; Reuters via Challenges). Unhelpfully, The



Independent and Finanzen alerted readers to the Washington Post's report of Falcon 9 facing NASA and Congressional scrutiny over alleged fuel safety risks for manned missions, but Dragon's successful ISS mission earned credit (NTV; AFP via Le Point).

**BREXIT AND GALILEO.** Space industry news was dominated by posturing over the UK's role in the ESA's Galileo project after Brexit, which could see the country lose access to the GPS-alternative (Politico; Bloomberg). Elsewhere, Sputnik Germany reports the Russian space agency may launch a competitor service to Starlink and OneWeb.

**THE BORING COMPANY** piqued interest again this week with Elon's announcement the LA tunnel was near completion (Daily Mail; Handelsblatt). Earlier coverage in The Guardian asked whether the small scale demo would fit a Tesla, while others contrasted Elon's vision of future transport to Uber's flying taxis, noting he doubts the technology will ever take off (L'Express; Financial Times).

**GRIMES.** Elon's high profile date to the Met Gala gave top-tier media a rare excuse to indulge in the gossip, with the BBC commenting -- "*some people think they have a powerful future ahead*" -- and NTV crudely suggested Elon did "not reveal exactly what he sees in Grimes" (see also The Times; Guardian). Predictably, tabloids also picked up the story (Daily Mail).

--end--

On 4 May 2018 at 19:15, Martin Schmidbaur <[mschmidbaur@milltownpartners.com](mailto:mschmidbaur@milltownpartners.com)> wrote:  
Dear all,

As ever, I'm sharing our weekly European/UK media intelligence note below.

**COMBATIVE ELON ON 'BIZARRE' EARNINGS CALL.** Elon's treatment of "boring, bonehead questions" was quickly caught in a media firestorm which framed his behaviour as the root cause for a slide in Tesla's stock price. European media variously characterised Elon as '*thin-skinned*' (DW), '*childish*' (Handelsblatt), or '*arrogant*' (Manager Magazin), with some drawing comparisons to Donald Trump over his mood swings and the dismissal of legitimate questions (Les Echos). The Financial Times concluded the earnings call "*revealed the limits of Mr Musk's personal showmanship in sustaining [Tesla's] elevated valuation*".

-- **Noting Elon's 'clarifying' tweetstorm** on Friday, FT Alphaville offers a predictably sarcastic take while the The Telegraph called out that Elon's "extraordinary defence" won praise in the Twittersphere (see also Handelsblatt; Les Echos).

-- **Beyond the fallout**, reporting underscored Tesla's revenue outperforming expectations and good Model 3 numbers, even if cash burn dominated the coverage (The Times; The Telegraph; Les Echos). Across European media, with many citing Bloomberg's analysis, a common editorial line was the question of when, rather than if, Tesla will need more cash (e.g. WirtschaftsWoche; FT Lex; BBC; Manager Magazin).

-- **Positively**, we've seen some cut through of coverage indicating early excitement about the Model Y timeline (Independent; Numerama), praising Tesla's success in cutting down on the use of cobalt (Financial Times) and new commitments to transparency of Autopilot safety data (Numerama).

**GRUMBLES FOR AN INDEPENDENT CHAIRMAN** to replace Elon at Tesla are spreading, with Finanzen reporting on a shareholder proposal for the June AGM even before this week's earnings call. We expect interest in this vote to grow ahead of the meeting.

*Milltown View: Media have seized on the slide in Tesla's share price following the earnings call as a proof point for the narrative that Elon's leadership is increasingly as much of a liability as it is an*



asset. In recent weeks, there have been several examples of Elon 'picking fights' with the media (e.g. *The Economist*) and analyst community. While his combative posturing may resonate with Tesla's loyal fan base, it is more likely to incite further critical reporting.

**UK MOVING TOWARDS BAN ON HYBRIDS.** The UK Government is considering long-term plans to revoke the classification of hybrids as "environmentally friendly" by 2040, according to the Financial Times. Details of the plan have yet to be finalised.

**NIKOLA'S LAWSUIT** against Tesla was largely drowned out by coverage of the earnings call. Reporting focused on the \$2bn headline figure but otherwise included little analysis of the validity of the claim (The Independent; Numerama;

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## **EXHIBIT 52**

## **EXHIBIT 52**



**From:** Sarah O'Brien [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=1BC7BE9F56124D1689F5D6B0D5E551A5-SARAH OBRIE]  
**Sent:** 7/11/2018 2:58:10 PM  
**To:** Caroline Liddle [cliddle@tesla.com]  
**CC:** DL-USComms [dl-uscomms@tesla.com]; Sam Teller [steller@tesla.com]  
**Subject:** Re: Additional Coverage on Thailand

+ Sam

On Jul 11, 2018, at 2:57 PM, Caroline Liddle <cliddle@tesla.com> wrote:

Media continue to report on Elon's involvement in Thailand, with media tone being fairly positive. Inc. writes Elon "heard of a problem, thought up a way to potentially offer assistance, and jumped up to help," adding that the fact the team was rescued in another way "doesn't diminish their achievement." Business Insider and NY Daily News note Elon's tweet, writing that Elon has "hit back at those who have criticized his attempts" to rescue the team.

In a more negative light, The Washington Post says Elon "is pioneering a new form of viral tourist: the would-be savior who becomes a part of the narrative, whether they actually helped or not."

The Washington Post, How Elon Musk used the Thai cave saga to pioneer a new form of viral tourism  
 NY Daily News, Elon Musk hits back at criticism over inserting himself in Thai boys cave rescue  
 Fortune, Elon Musk Is Leaving His Unused 'Kid-Sized Submarine' at the Site of the Trapped Thai Soccer Team  
 Business Insider, Elon Musk hit back at those mocking his contribution to the cave rescue: 'Something's messed up if this is not a good thing'  
 Inc.com, If You're Criticizing Elon Musk for Trying to Save Kids With a Mini Submarine, It's Time to Take a Long, Hard Look at Your Life  
 Thrillist, ELON MUSK IS GETTING SKEWERED ON TWITTER FOR OFFERING TO HELP WITH THE THAILAND CAVE RESCUE  
 The Next Web, There are numerous reasons to dislike Elon Musk. This isn't one of them.  
 Geek, Elon Musk Delivered a Useless "Sub" for the Cave Rescue  
 Inverse, Thai Cave Rescue: Elon Musk Reacts to Submarine Criticism  
 New Scientist, Elon Musk's submarine plan to rescue Thai cave boys deserves respect  
 Huffington Post (UK), Elon Musk's Submarine Is Everything Wrong With Western Foreign Policy

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**From:** Caroline Liddle <cliddle@tesla.com>  
**Date:** Tuesday, July 10, 2018 at 4:58 PM  
**To:** DL-USComms <DL-USComms@tesla.com>  
**Subject:** Re: Additional Coverage on Thailand

Media continue to report on Elon's contribution to the rescue of the Thai soccer team, with media tone being fairly balanced. Bloomberg and CNBC note Elon "defended the project on Twitter" and pointed out that the contraption "could be used for other types of rescues, such as for 'vulnerable patients' in toxic environments." The Washington Post adds that two Thai artists drew a "particularly intricate" cartoon to represent the parties involved in the mission, labeling Elon as the "face of Iron Man."

In contrast, other outlets, like Business Insider, question the point of Elon's venture, commenting, "To encourage a waterfall of media coverage about his brilliant ideas? To bury recent bad press about pay inequity, accusations against a female reporter, and widespread layoffs at Tesla? To capitalize on the world's attention on the rescue? To facilitate a narrative of himself as a savior? To bump his companies' own valuation?"



Mashable writes that Elon's help was "useful for anyone trying to understand what motivates his eccentric genius." It adds that Elon "went on a weirdly defensive Twitter rant" and comments, "Elon, this was a win for you. You had managed to avoid making this rescue about you."

CNBC, [Elon Musk says his 'mini-submarine' can be used for other things](#)  
 Bloomberg, [Elon Musk Defends Mini Submarine Left Unused in Thai Cave Rescue](#)  
 The Washington Post, ['Hooyah, Hooyah, Hooyah': Jubilation at Thai cave rescue spreads across the world](#)  
 Vox, [Elon Musk's big, failed plan to bring a mini-submarine to rescue the Thai boys](#)  
 NY Daily News, [Elon Musk's 'tiny, kid-sized submarine' wasn't 'practical' for Thai cave rescue efforts, official says](#)  
 Business Insider, [Just what was the point of Elon Musk's 'non-practical' submarine rescue effort in Thailand?](#)  
 Business Insider, [Elon Musk reveals email thread explaining why he built a mini-submarine to help save trapped Thai soccer team](#)  
 Mashable, [What Elon Musk, a 'useful narcissist,' really wanted from the Thai Cave saga](#)  
 Slate, [A Complete Timeline of Elon Musk's Fruitless Attempt to Rescue the Thai Soccer Team](#)  
 Inverse, [Is Elon Musk Criticism Unfair? What to Make of the Thai Submarine Backlash](#)  
 Inverse, [Thai Cave Rescue: Elon Musk's Submarine Gets a Response From Authorities](#)  
 BBC (UK), [Why was Elon Musk at the Thai cave rescue?](#)  
 The Guardian (UK), [Elon Musk queries expertise of Thai cave rescue officials](#)

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**From:** Caroline Liddle <cliddle@tesla.com>  
**Date:** Tuesday, July 10, 2018 at 11:22 AM  
**To:** DL-USComms <DL-USComms@tesla.com>  
**Subject:** Additional Coverage on Thailand

With the entire soccer team rescued from the cave in Thailand, media continue to report on Elon contributing to the rescue operation, with media tone being fairly negative after the contraption was deemed "impractical" by a Thailand official. The NYT writes that "the Musk dreamed up a 'kid-size' submarine to help. It turns out they didn't need it." BBC reports the "head of the rescue mission" said the "equipment [Elon and team] brought to help us is not practical with our mission."

Elon's tweet is seen throughout coverage, with Business Insider writing that "Elon and team visited the tunnel last night to assess the conditions and get further feedback on the mini-submarine, in case it was used as a backup option."

Other outlets such as Mashable report on Elon's "Twitter rant," writing, "He took to Twitter Tuesday morning to defend his fun-size rescue invention." It writes that Elon "claimed that Osotthanakorn was not the head of the rescue effort — that he was instead the former provincial governor" and the real "head of the rescue effort Dick Stanton was very into the kid-size submarine," noting that Elon "even provided email proof."

CNBC TV, [Elon Musk puts SpaceX submarine in Thai cave](#)  
 TIME, [Thailand Rescue Officials Say Elon Musk's Submarine Was 'Not Practical'](#)  
 NPR, [All 12 Boys And Their Coach Are Rescued From Thai Cave After 2 Weeks](#)  
 New York Post, [Elon Musk's kid-sized submarine was of no use in Thai cave rescue](#)  
 Buzzfeed, [People Really Aren't Here For Elon Musk's Rescue Submarine](#)  
 Vice, [Elon Musk told "thanks" — but the Thai divers have got this](#)  
 Motherboard, [All 12 Thai Boys Rescued From Cave Without Help from Elon Musk's 'Impractical' Submarine](#)  
 The Verge, [Elon Musk's mini-submarine 'not practical' for Thailand cave rescue, say authorities](#)  
 Ars Technica, [Thai official: Elon Musk's submarine "not practical for this mission" \[Updated\]](#)  
 Business Insider, [Elon Musk is posting photos and videos of the Thai cave rescue operation — and SpaceX confirmed he's there](#)  
 Mashable, [Elon Musk goes on Twitter rant after reports that his mini submarine was 'not practical'](#)  
 Mashable, [Elon Musk visits cave in Thailand where soccer team is trapped](#)  
 Fast Company, [Elon Musk was tweeting from Thai cave rescue operation site](#)  
 Cnet, [Elon Musk's submarine 'not practical' for Thai cave mission, rescue head says](#)  
 Popular Mechanics, [All 12 Thai Boys Rescued From Cave](#)  
 Gizmodo, [Is Elon Musk Serious?](#)  
 Entrepreneur, [Elon Musk's Mini-Sub Was 'Not Practical' for Thailand Cave Rescue](#)

The Daily Beast, [Elon Musk Delivers 'Impractical' Tiny Submarine to Thai Cave](#)  
Hypebeast, [Elon Musk's Thailand Rescue Submarine Is "Not Practical"](#)  
Highsnobiety, [Elon Musk and His Mini-Sub Are in Thailand to Assist With Rescue Mission](#)  
Nerdist, [ELON MUSK CREATED A "KID-SIZE" SUBMARINE FOR THAI CAVE RESCUE](#)  
Inverse, [Elon Musk Posts Video and Photo from Thai Cave Rescue](#)  
Pop Culture, [Elon Musk Reveals Thailand Cave Rescue Photos](#)  
Dezeen, [Elon Musk rubbishes claims his tiny submarine was "not practical" for Thai cave rescue](#)  
BBC (UK), [All boys and coach rescued from Thai cave](#)

The New York Times, [Elon Musk's Mini-Sub Was 'Not Practical' for Thai Cave, Chief of Rescue Says](#)

As the world watched rescuers struggle to save 12 boys and their soccer coach trapped in a cave in northern Thailand, the tech billionaire Elon Musk dreamed up a "kid-size" submarine to help. It turns out they didn't need it.

By Tuesday, the rescue operation had succeeded in saving all 13 people trapped in the Tham Luang Cave. Earlier this week, eight of the soccer teammates were evacuated from the flooded cave, a mission that required guiding the boys through passageways filled with water.

It was a daunting task. On Friday, a former Thai Navy SEAL lost consciousness and died while placing air canisters on a route within the cave being used in the rescue effort.

Once the last four boys, their soccer coach and military personnel were evacuated Tuesday, Thai officials said in a Facebook post that the mission was complete. It had taken 18 days, dozens of divers and hundreds of volunteers, but Mr. Musk's mini-submarine invention was left on the sidelines, a Thai official said.

Mr. Musk himself was on the scene. He wrote in a tweet early on Tuesday local time that he had just returned from a large cavern in the Tham Luang cave complex where he had deposited the quickly assembled sub.

<image001.png>

But on Tuesday, the head of the search operation, Narongsak Osottanakorn, until recently the provincial governor, rejected the notion that Mr. Musk's custom-made submersible was suitable for the extraction.

"I assure you that the equipment he brought to help us is not practical for our mission," Mr. Narongsak said. "Even though the equipment has state of the art technology, it does not fit our mission in the cave."

Over the weekend, Mr. Musk dispatched 10 engineers from his companies to assist in the rescue effort in Thailand. They sent engineers from Tesla, Mr. Musk's electric vehicle company; SpaceX, his rocket company; and the Boring Company, which specializes in tunneling and construction, a Boring Company spokesman said on Saturday.

Mr. Musk had mused on Twitter that they could build a "tiny, kid-sized submarine" with a part from a Falcon rocket, which SpaceX produces. He had said that a transfer tube, which helps move liquid oxygen to fuel the rocket's engine, could serve as the body of the submarine.

Mr. Musk's representatives did not make him available for comment, but a SpaceX spokesman said that divers with the mission had signed off on the efforts.



“Multiple divers involved with the rescue said the mini-sub design was viable, and their feedback directly informed our engineering and testing,” he said.

In his tweets amid the rescue, Mr. Musk presented his own evidence that team leaders had welcomed his help. In an email he shared from Richard Stanton, one of the first two British cave divers to reach the soccer team, Mr. Stanton had asked him to “please keep working on the capsule details.” A spokesman for Mr. Stanton said Tuesday that the cave proved to be too narrow for the mini-submarine.

Soon after the cave rescue was complete, it became clear that Mr. Musk would be sending many more employees to Asia in the coming year. On Tuesday, Tesla announced an agreement with Chinese authorities to build a battery and automobile factory in Shanghai, its first plant outside the United States.



## **EXHIBIT 53**

## **EXHIBIT 53**

From: Elon Musk  
Sent: Mon 7/09/2018 11:48 PM (GMT-07:00)  
To: Steve Davis  
Cc: Extranet Contact - Sam Teller (Tesla)  
Bcc:  
Subject: Re: PowerWalls

Great. We need to go all out and make this guy retract his comment. The pod was never tested in their swimming pool rig that has the worst angles and widths. We should find out where that pool is and test it before the apparatus is removed.

Sent from my iPhone

On Jul 10, 2018, at 2:44 PM, Steve Davis <[Steve@spacex.com](mailto:Steve@spacex.com)> wrote:

He was actually fired as governor. But seems to be popular. See article text below.

Team is trying to contact Interior Minister and searching for experts.

Am waking Gleeson to get him involved.

---

He's still governor of the cave!

The top official in the Thai city of Chiang Rai was forced to step down over the weekend — but has become so popular as the public face of the soccer-team cave rescue that he's been allowed to stay on as supervisor of the operation, according to reports.

Narongsak Osatanakorn was ordered in April to wrap up his job as governor of the northern city, and was set to be formally replaced by new Gov. Prachon Pratsakun on Friday, [according to Khaosod English](#).

But in his final weeks in the job, a local youth soccer team was [trapped inside a flooded cave](#), and Osatanakorn — who has degrees in geology and engineering — gained international fame through his informative press conferences on the search and rescue efforts.

In a scenario reminiscent of Rudy Giuliani's attempts to extend his term as mayor of New York in the wake of 9/11, Thais pleaded with Prime Minister Prayuth Chan-ocha to let Osatanakorn stay on in the post until the boys were safe, [according to Khaosod](#).

Chan-ocha said it was impossible because the order had already been signed by the king — but the government agreed to let him stay on to run the rescue effort alone.

"The command structure here is still the same," Osatanakorn told reporters outside the cave last week. "I'm still the top supervisor, as usual."

Osatanakorn is being shunted to the smaller neighboring province of Phayao in a move widely seen as a demotion, according to Khaosod.

Thailand's military junta insists it is just a routine shuffling of officials, but critics say Osatanakorn is being punished for refusing to approve allegedly corrupt government construction projects, the site reports.

<https://nypost.com/2018/07/09/popular-thai-governor-fired-but-keeps-cave-rescue-gig/>

On Jul 10, 2018, at 2:29 AM, Sam Teller <[steller@tesla.com](mailto:steller@tesla.com)> wrote:

He's the fucking regional governor who has ignored our calls

On Jul 10, 2018, at 2:28 PM, Steve Davis <[Steve@spacex.com](mailto:Steve@spacex.com)> wrote:

There is a running BBC blog on the rescue. Entirety of relevant entry said:

---

Posted at 1:10

**Musk's offer 'not practical' for this mission**

The head of the rescue mission, Narongsak Osotthanakorn, has been asked whether he can make use of Elon Musk's offer to help.

He says he acknowledges the help of Musk and his team, but that "the equipment they brought to help us is not practical with our mission".

"Even though their equipment is technologically sophisticated, it doesn't fit with our mission to go in the cave."

---

Our guys don't know him so we are figuring out who he is.

On Jul 10, 2018, at 2:18 AM, Elon Musk <[erm@tesla.com](mailto:erm@tesla.com)> wrote:

Btw, my gf just texted me saying the head of the Thai rescue team said our solution wasn't practical and that the press is turning negative.

I just woke up in Shanghai. What's happening?

<image1.png>

Sent from my iPhone

On Jul 10, 2018, at 1:43 PM, Steve Davis <[Steve@spacex.com](mailto:Steve@spacex.com)> wrote:

We have 12 Powerwalls sitting unopened at camp. One of the Thai people asked if we could donate them to a local hospital.

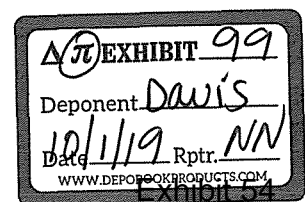
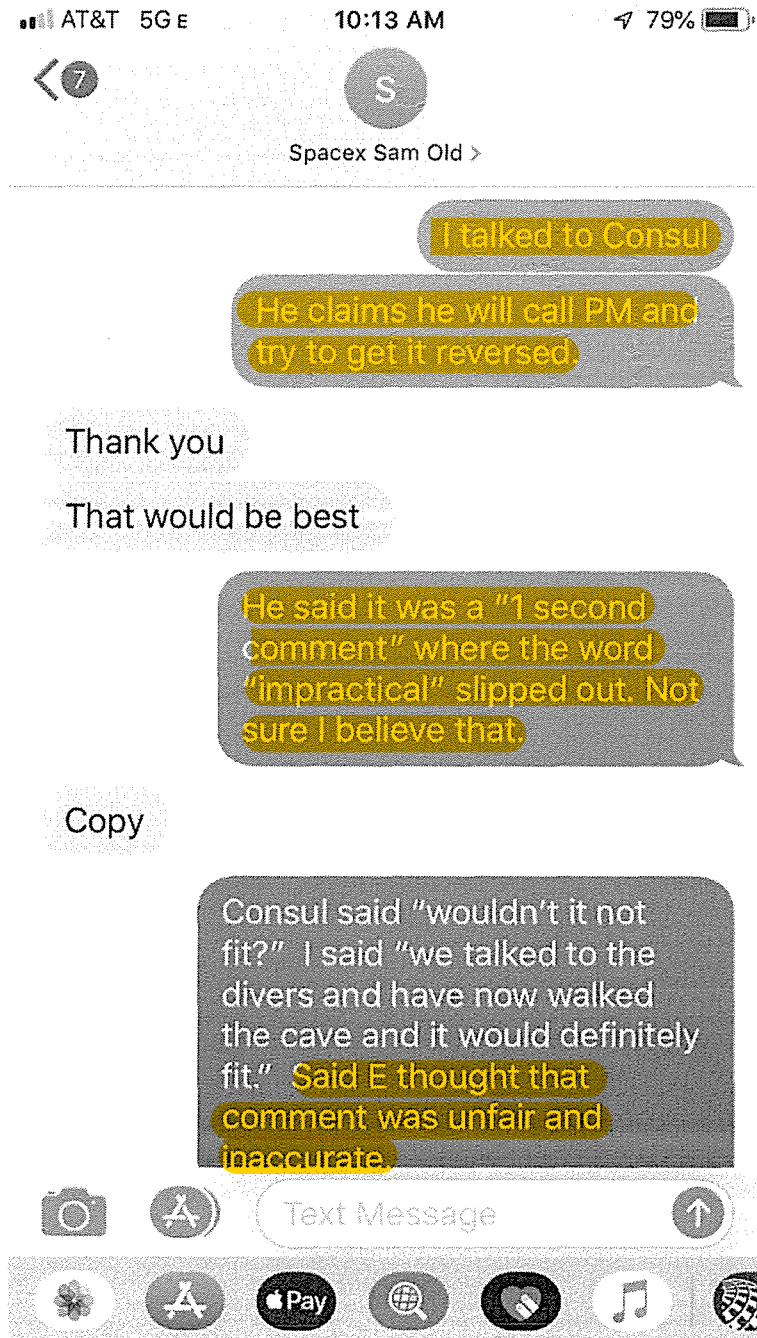
Do you want to:

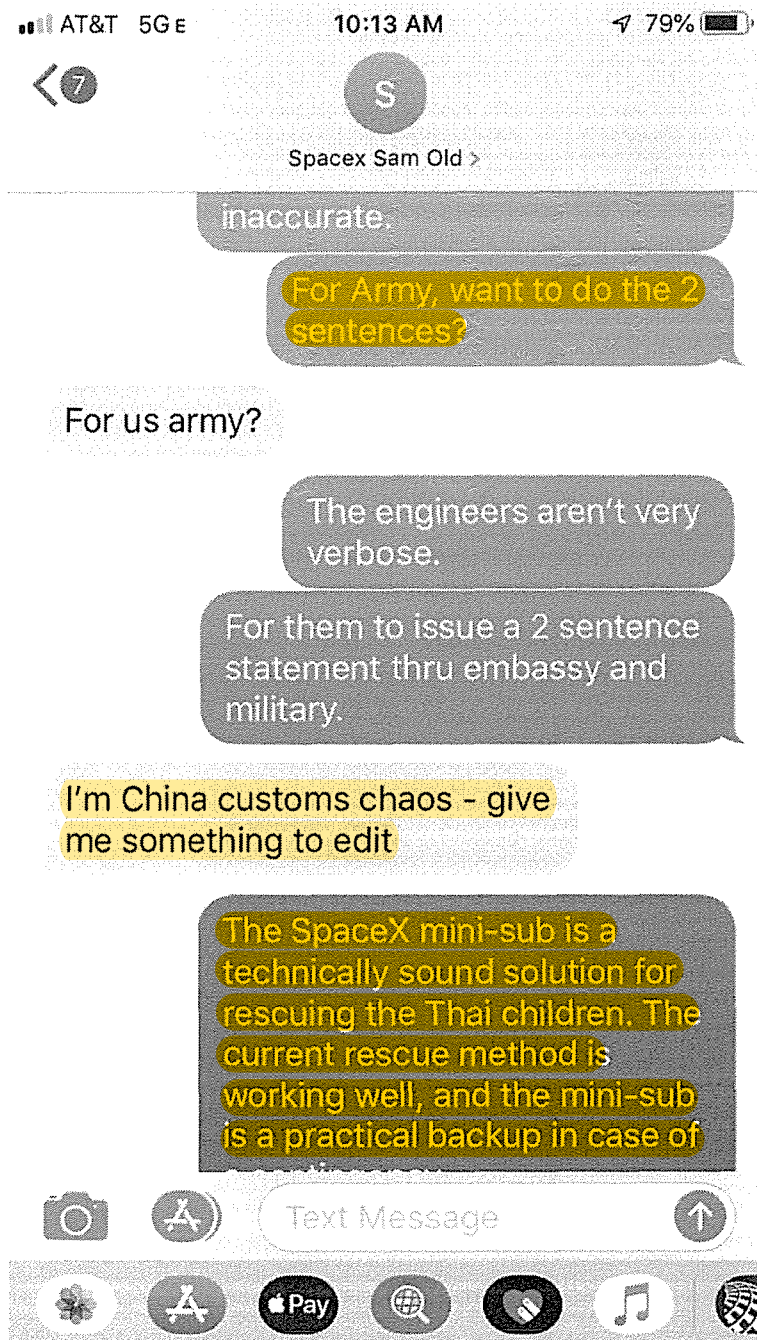
1. Donate all
2. Donate none
3. Donate 10 and let me take 2 for the boring company - would love to replace our grout car generator w a powerwall :)

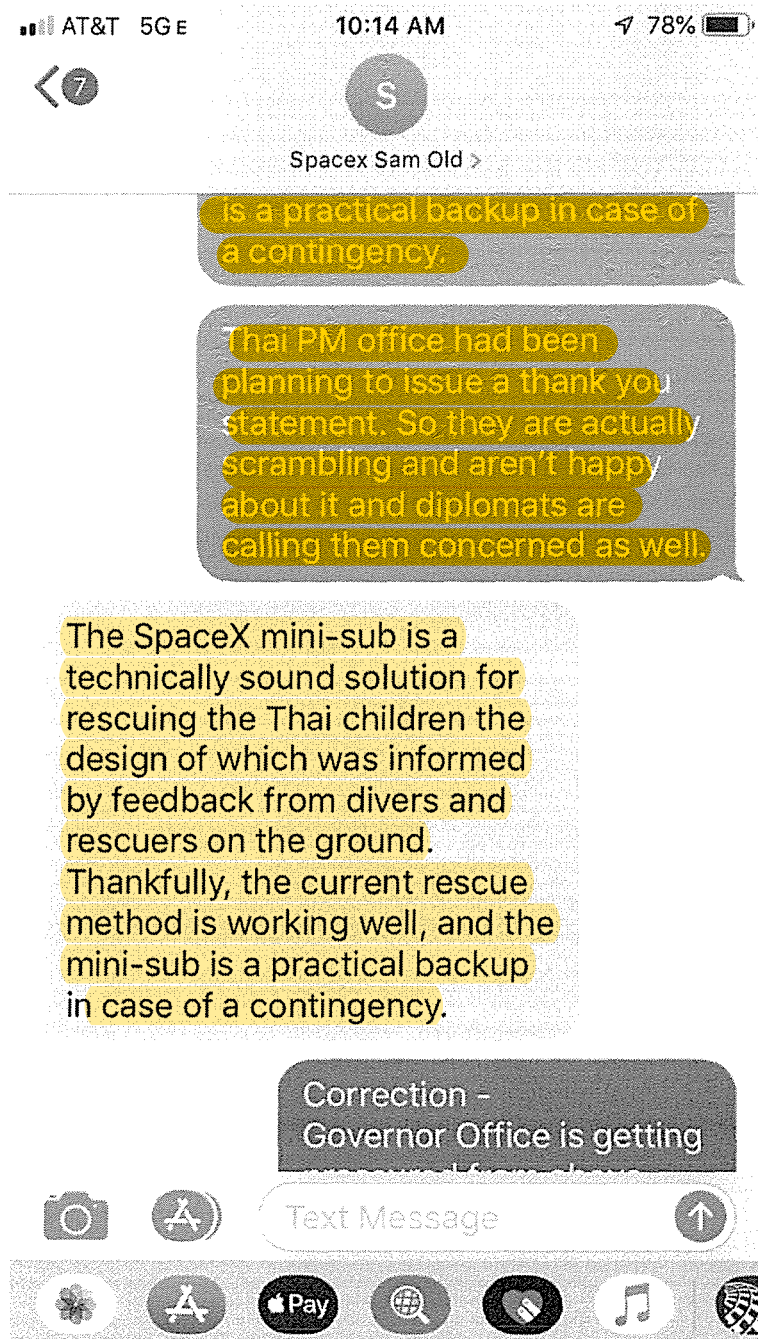


## **EXHIBIT 54**

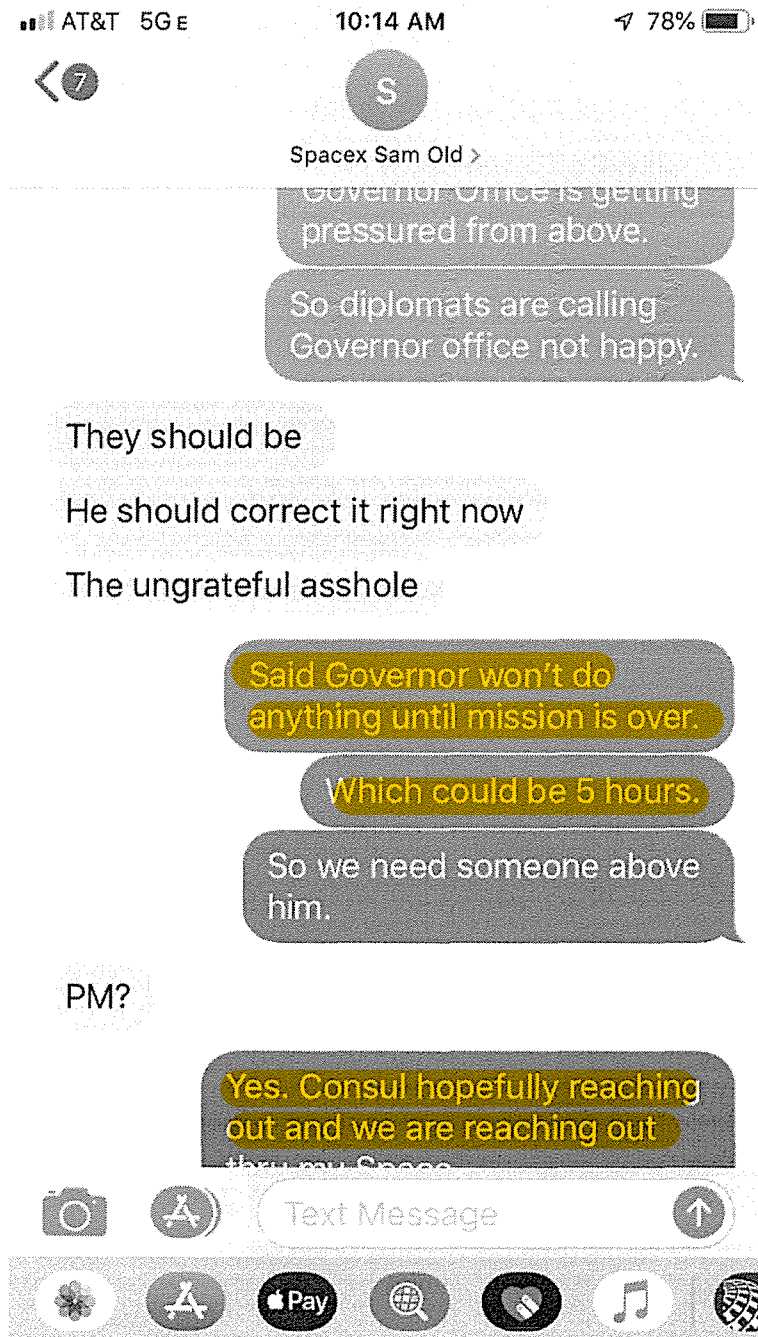
## **EXHIBIT 54**

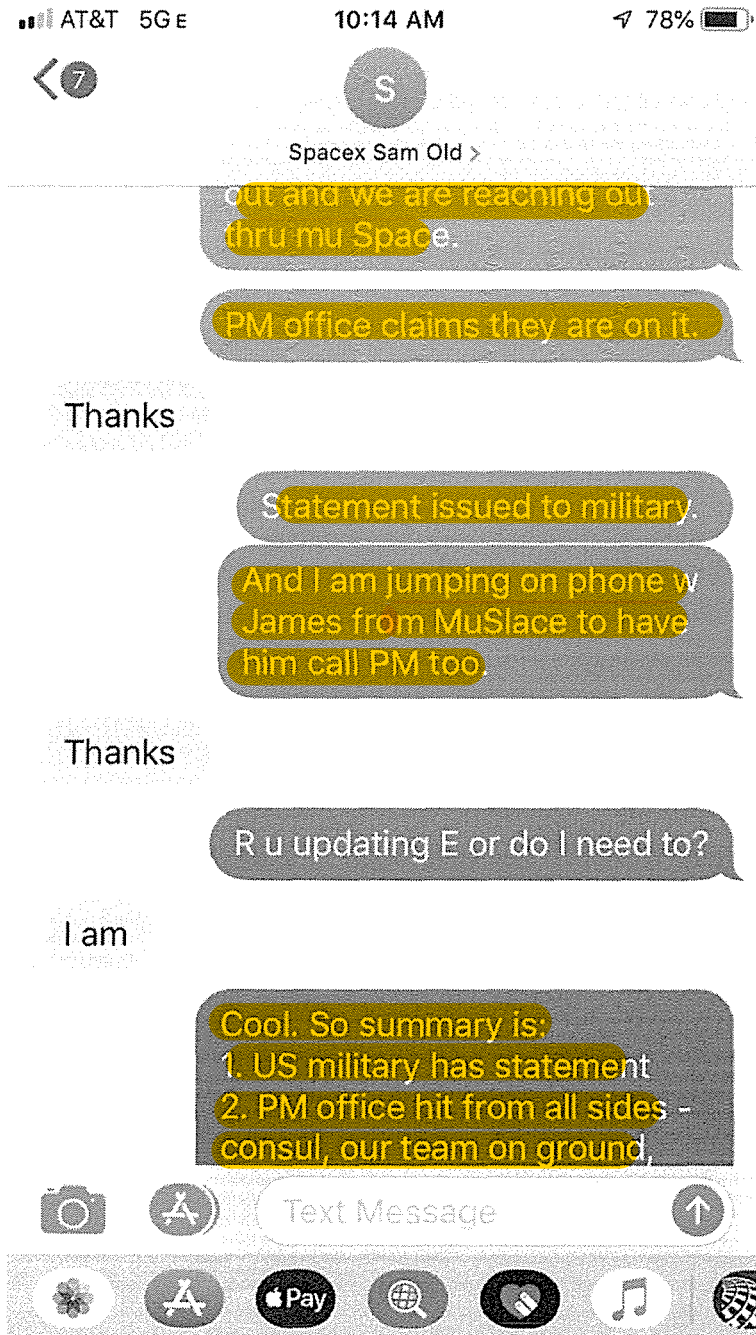


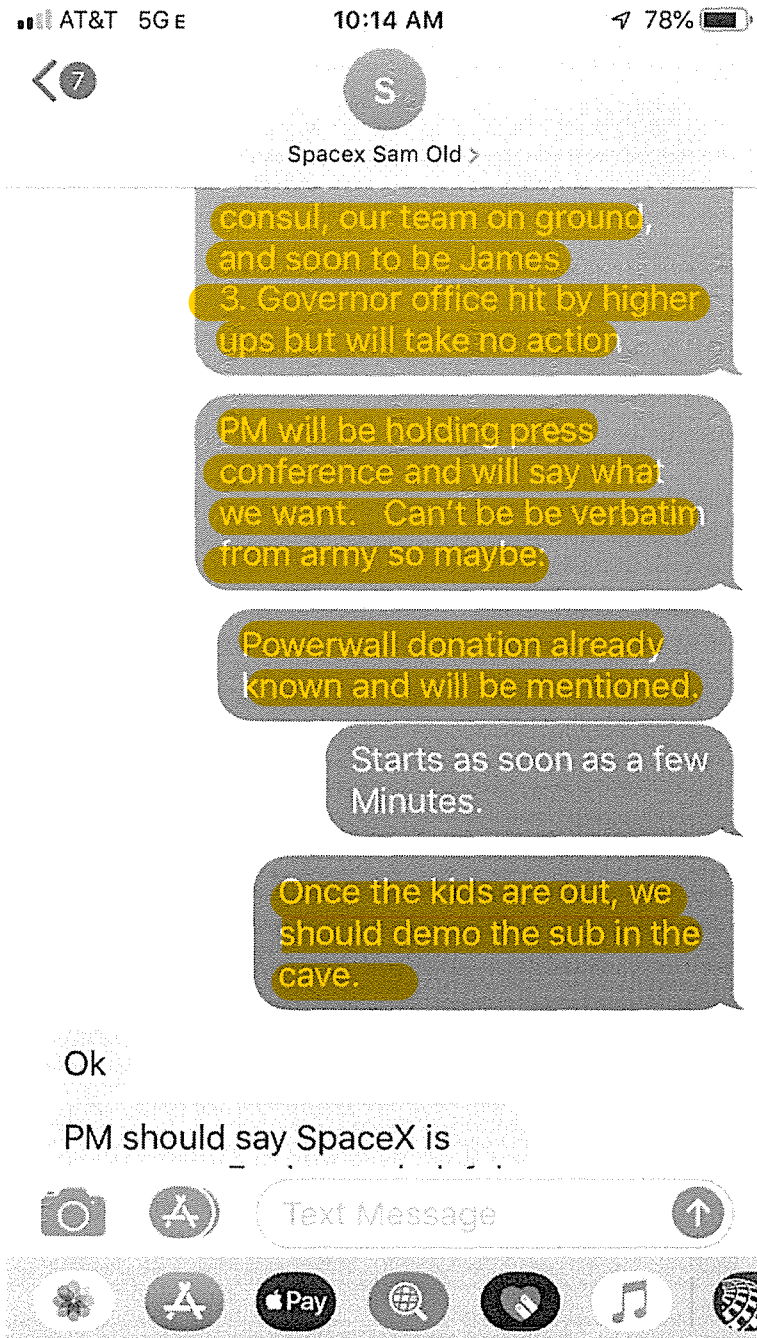


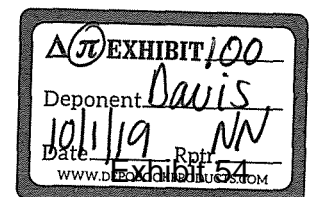
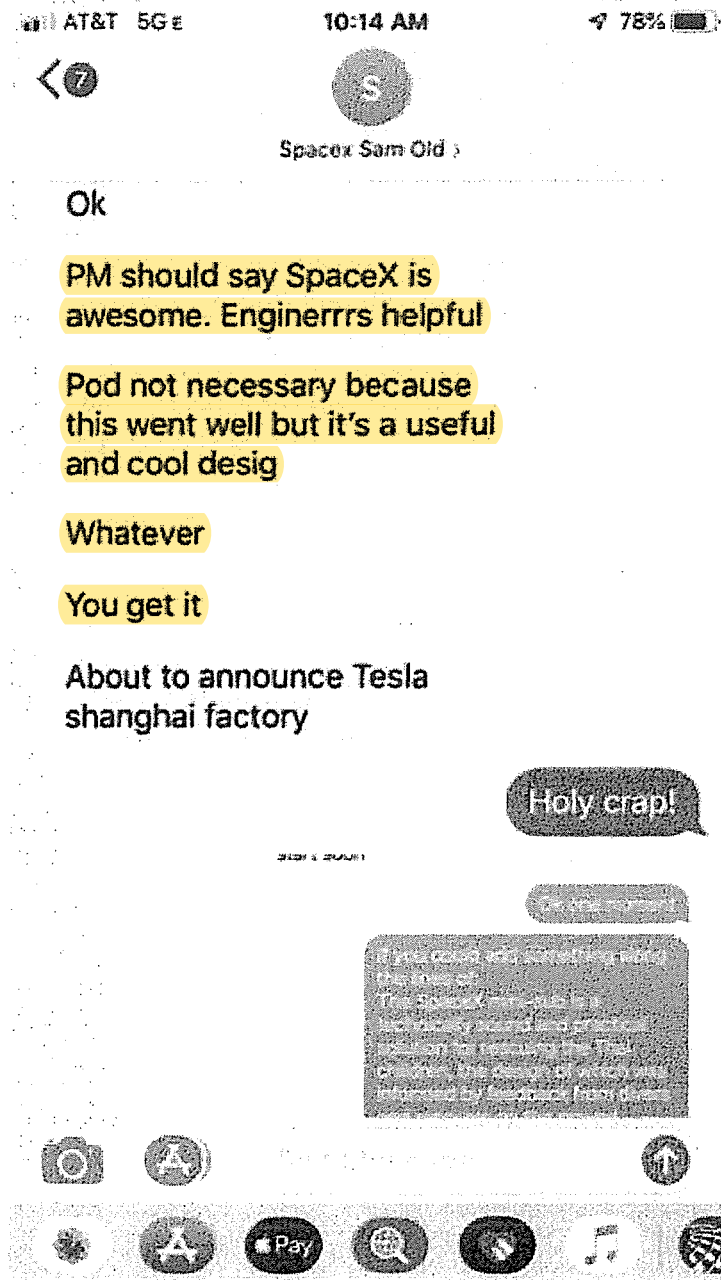




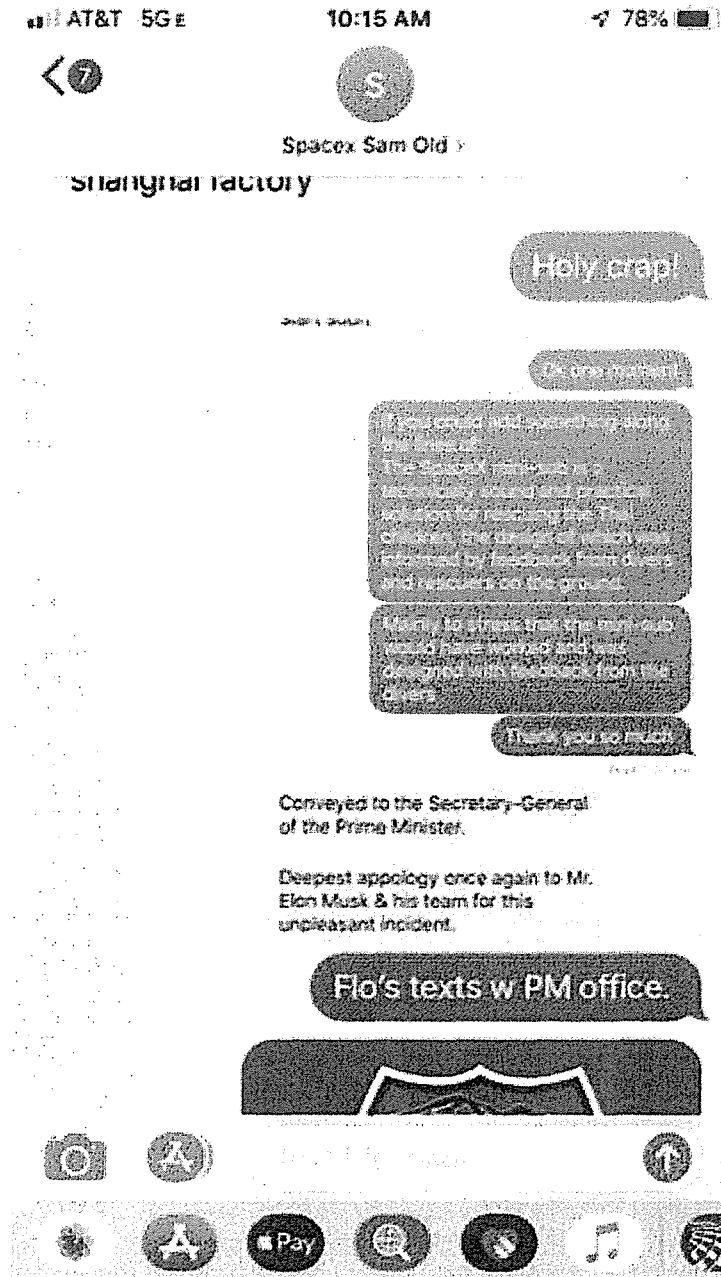


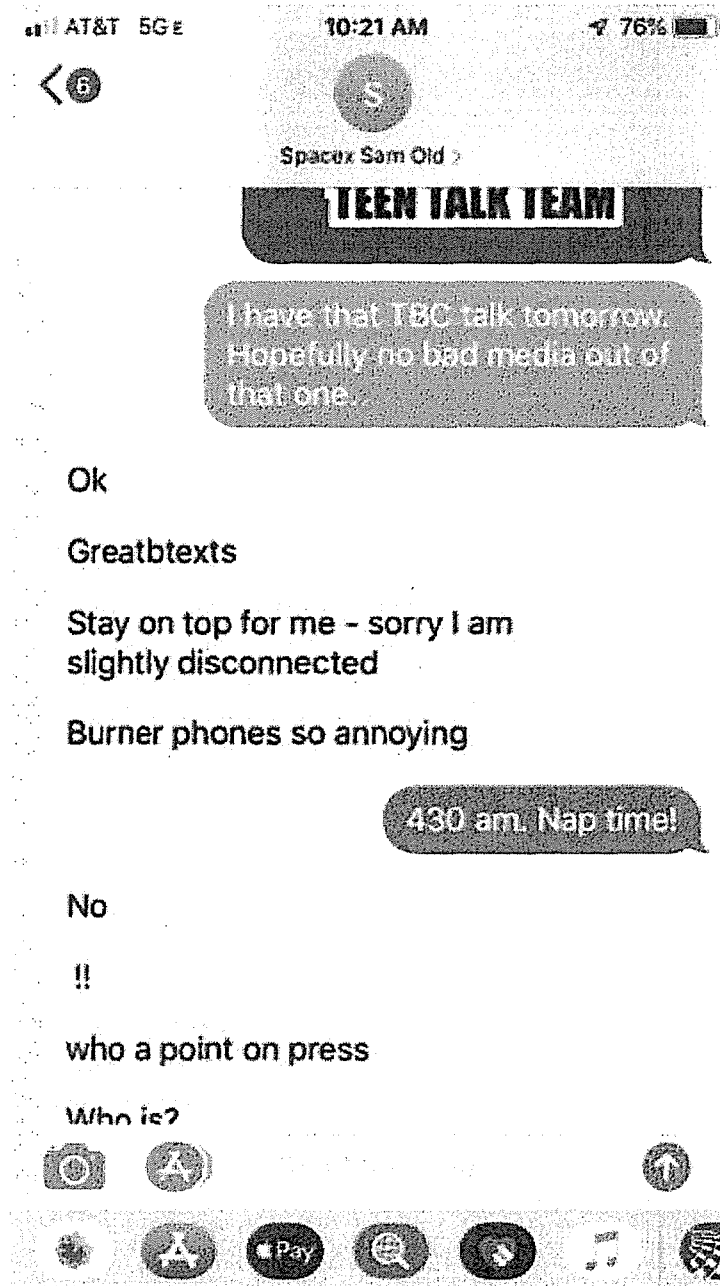


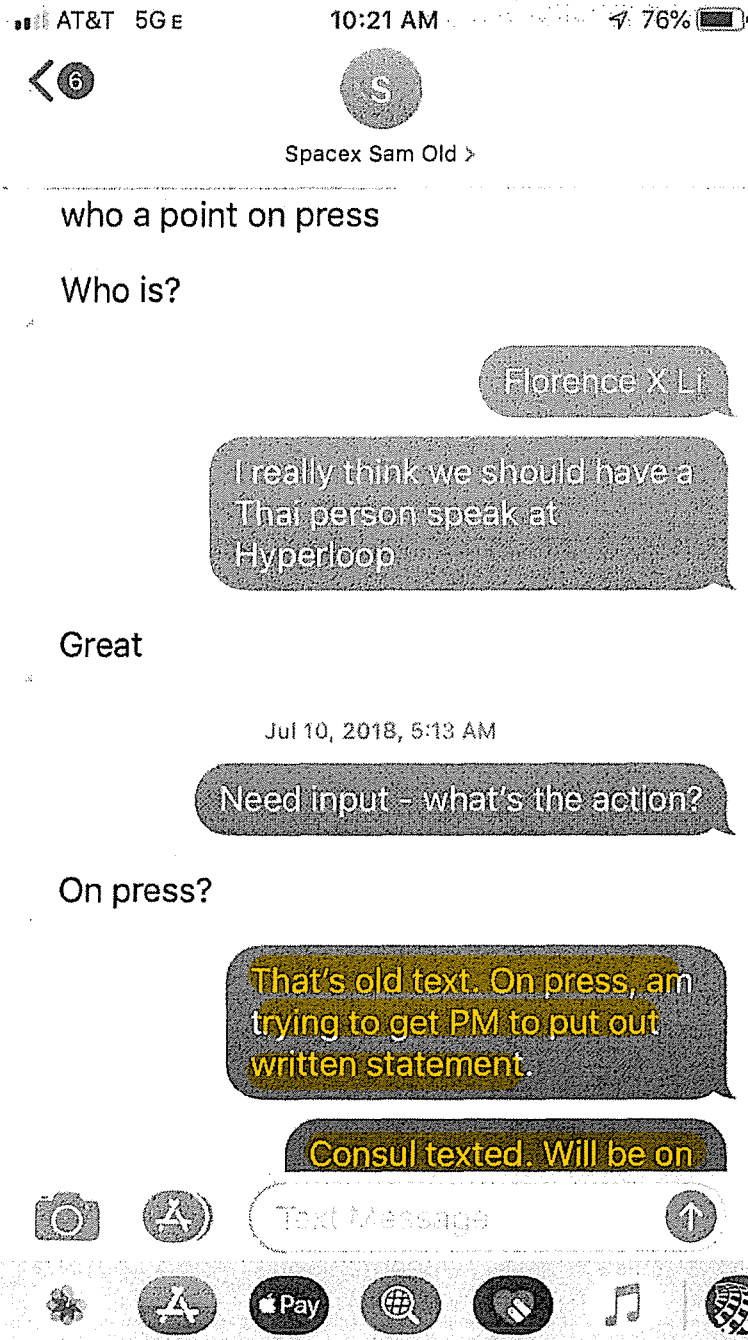


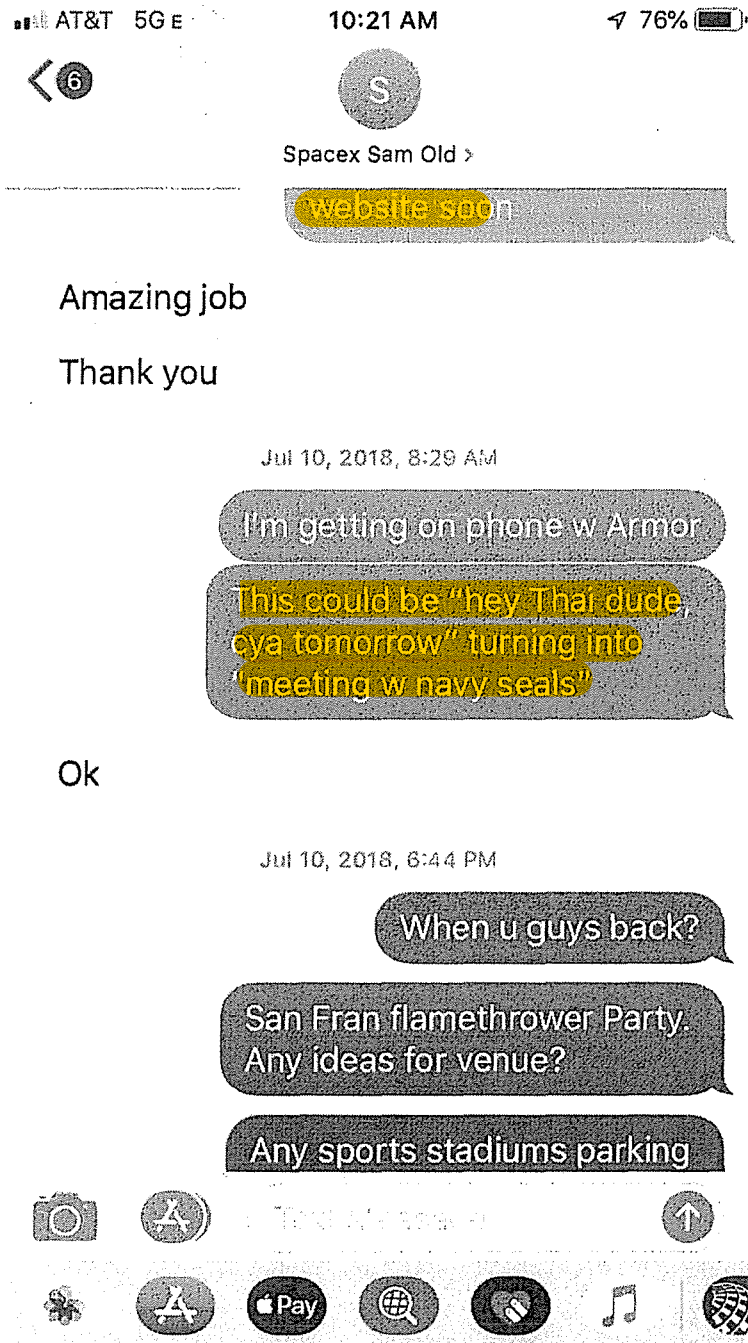




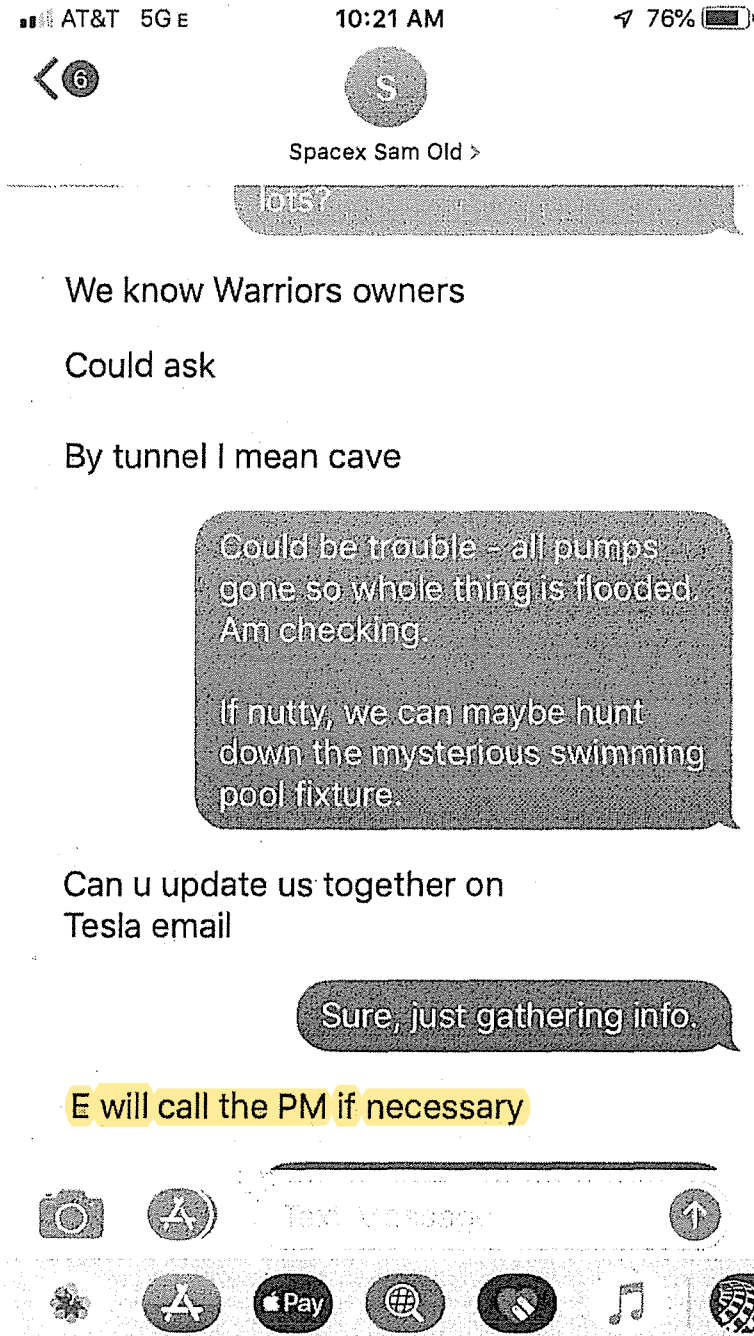


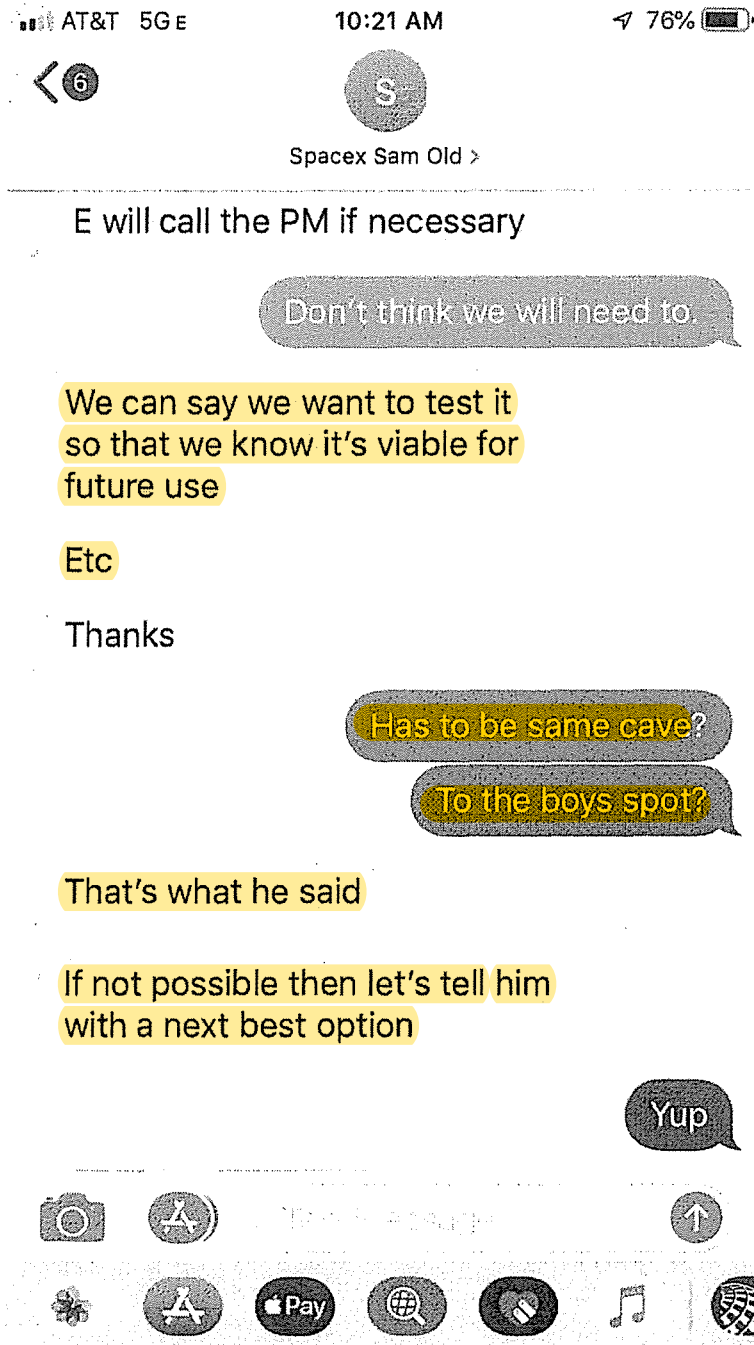


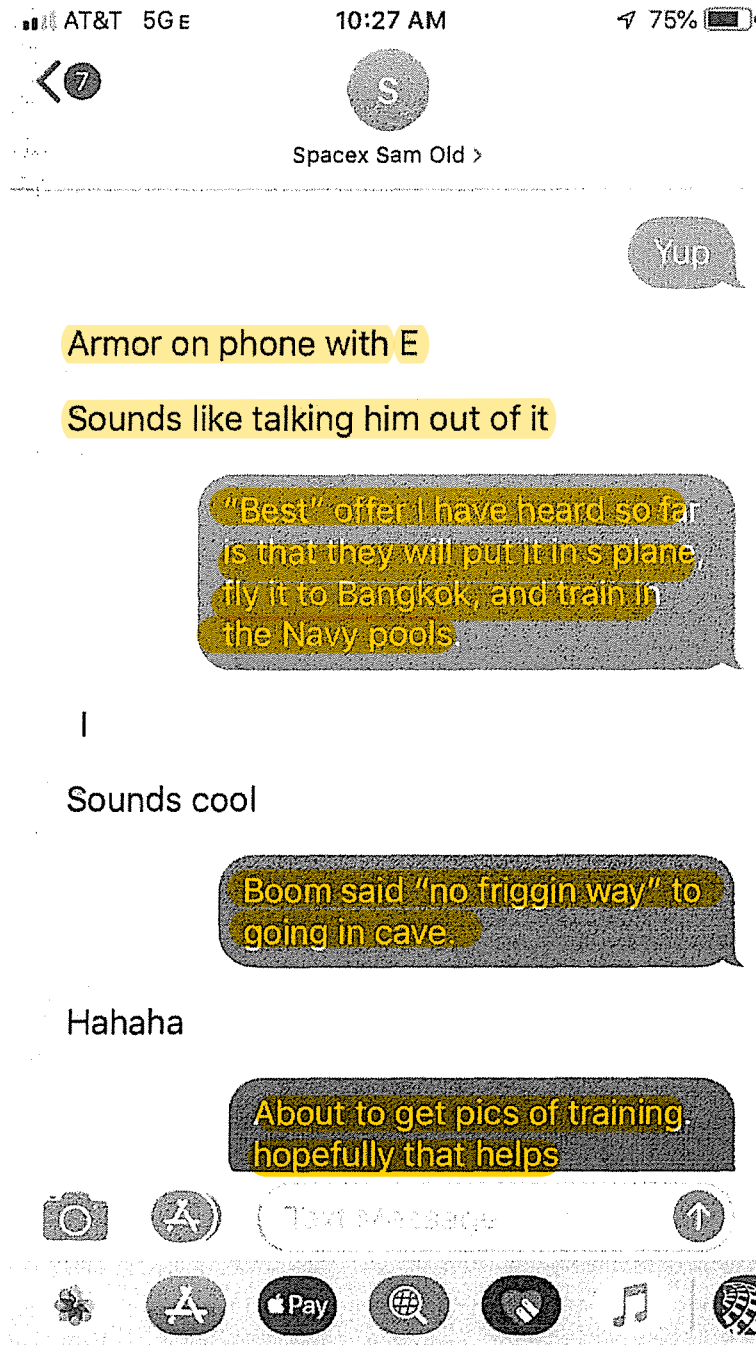


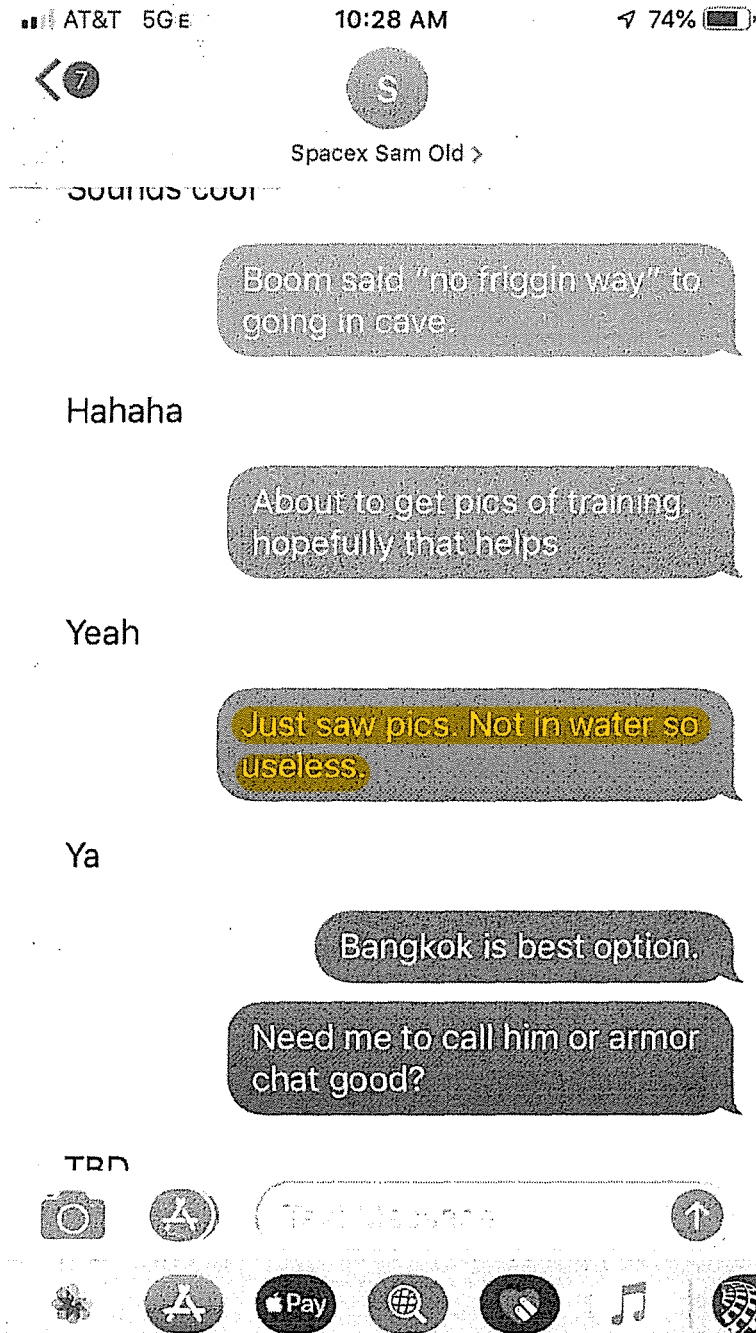








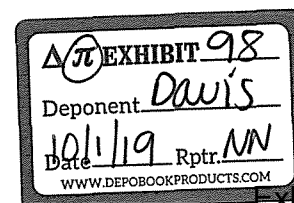
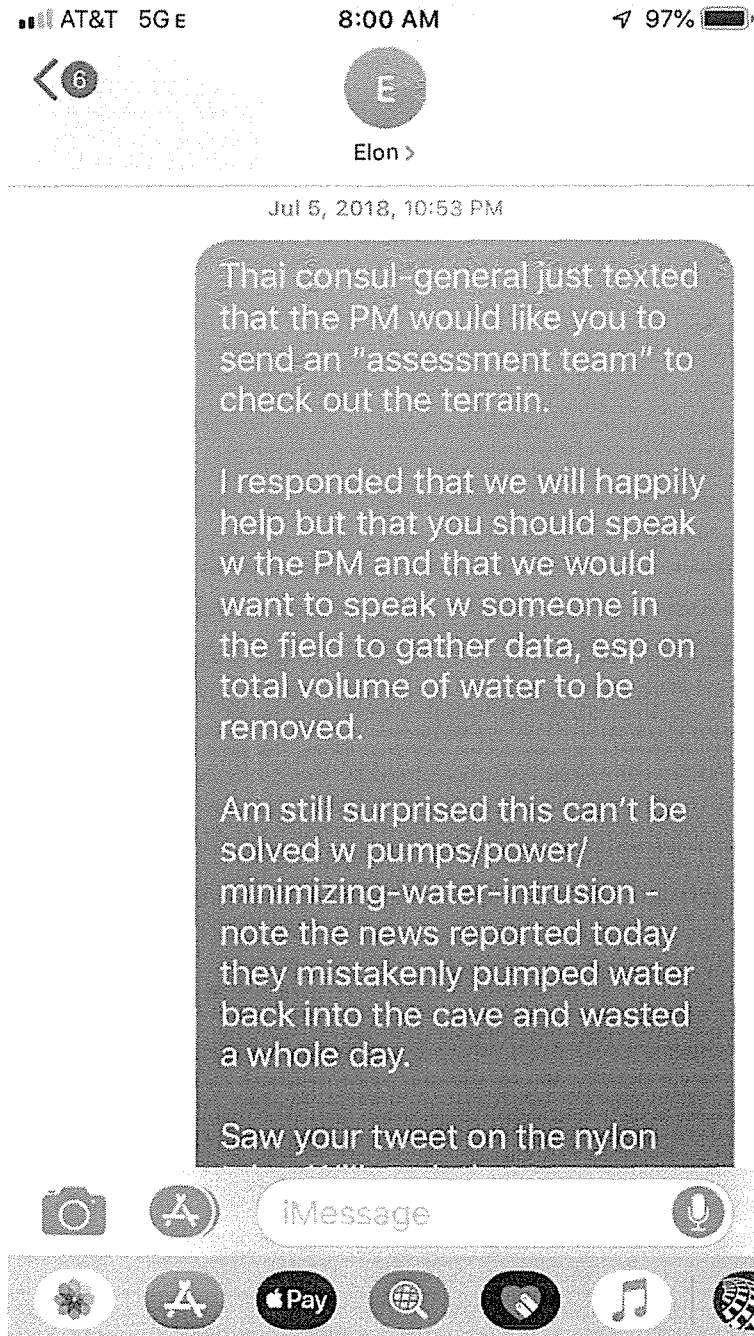


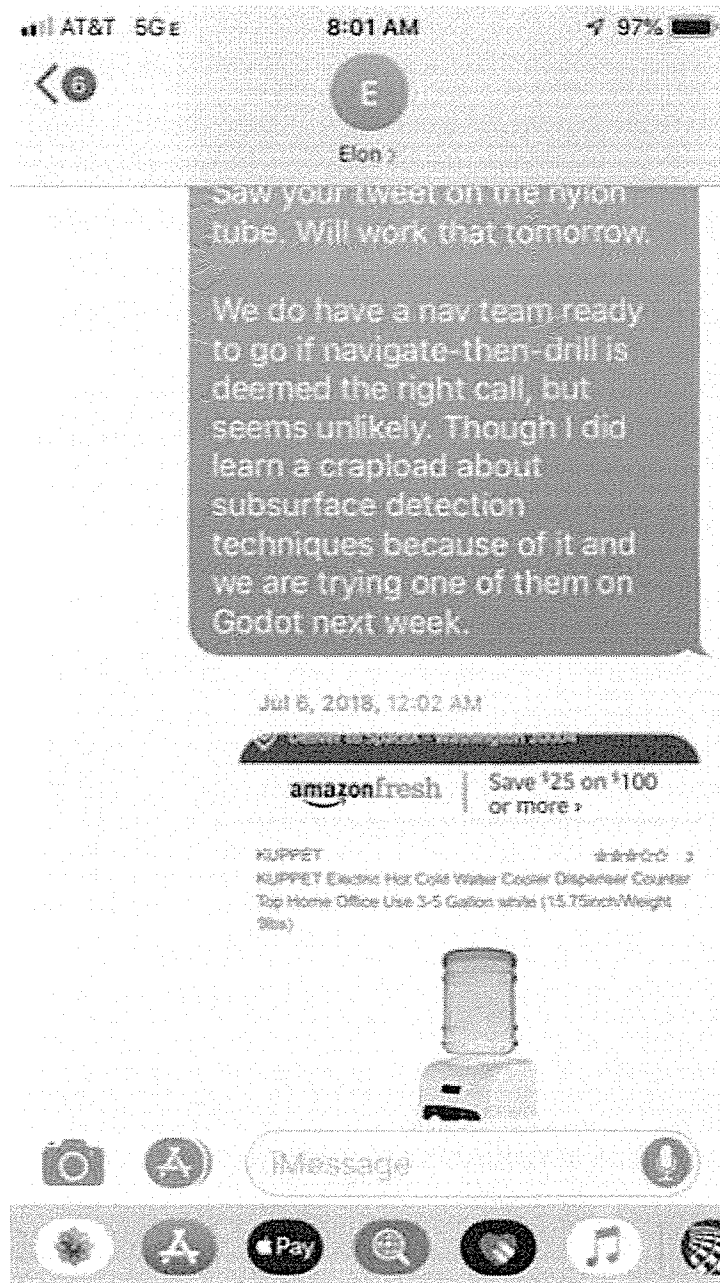


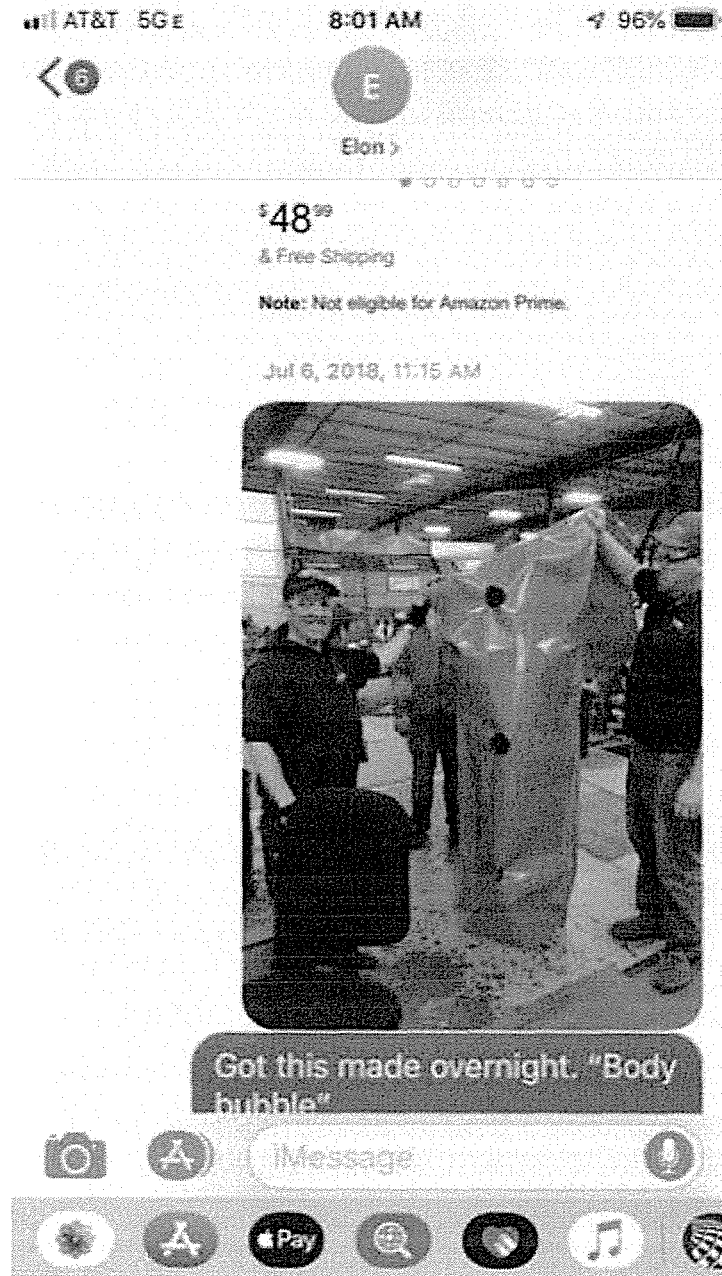


## **EXHIBIT 55**

## **EXHIBIT 55**

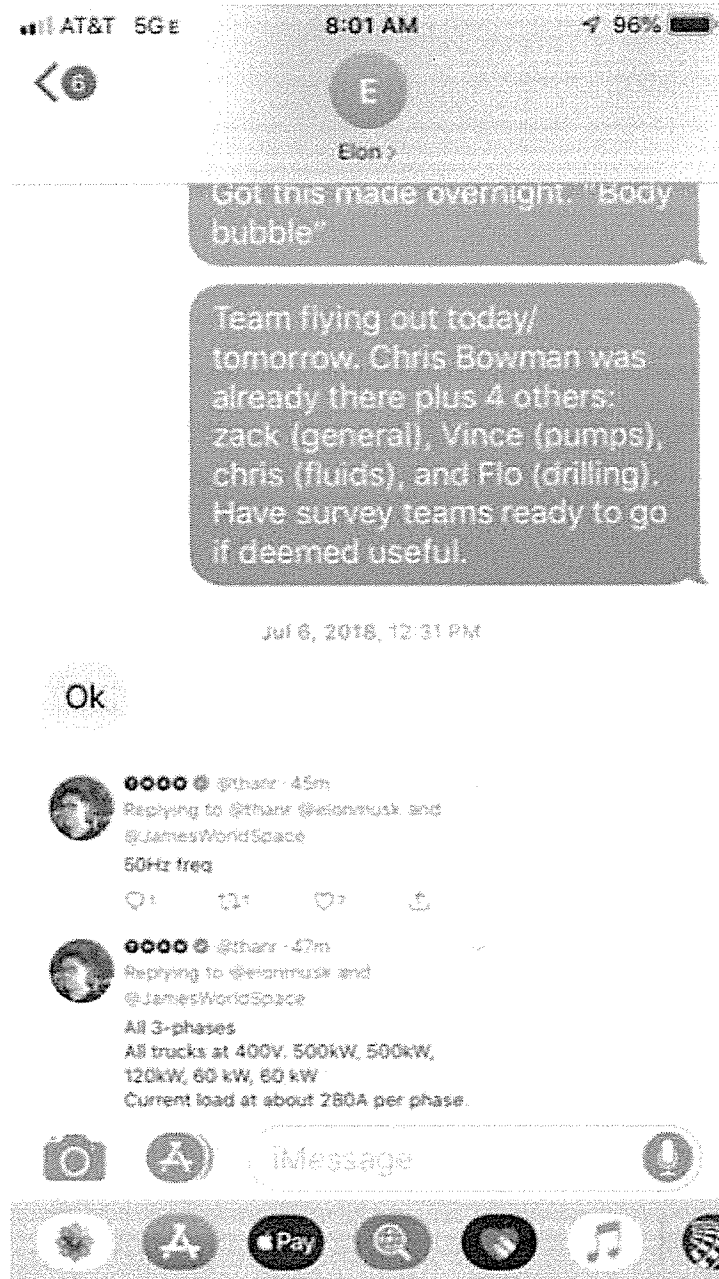


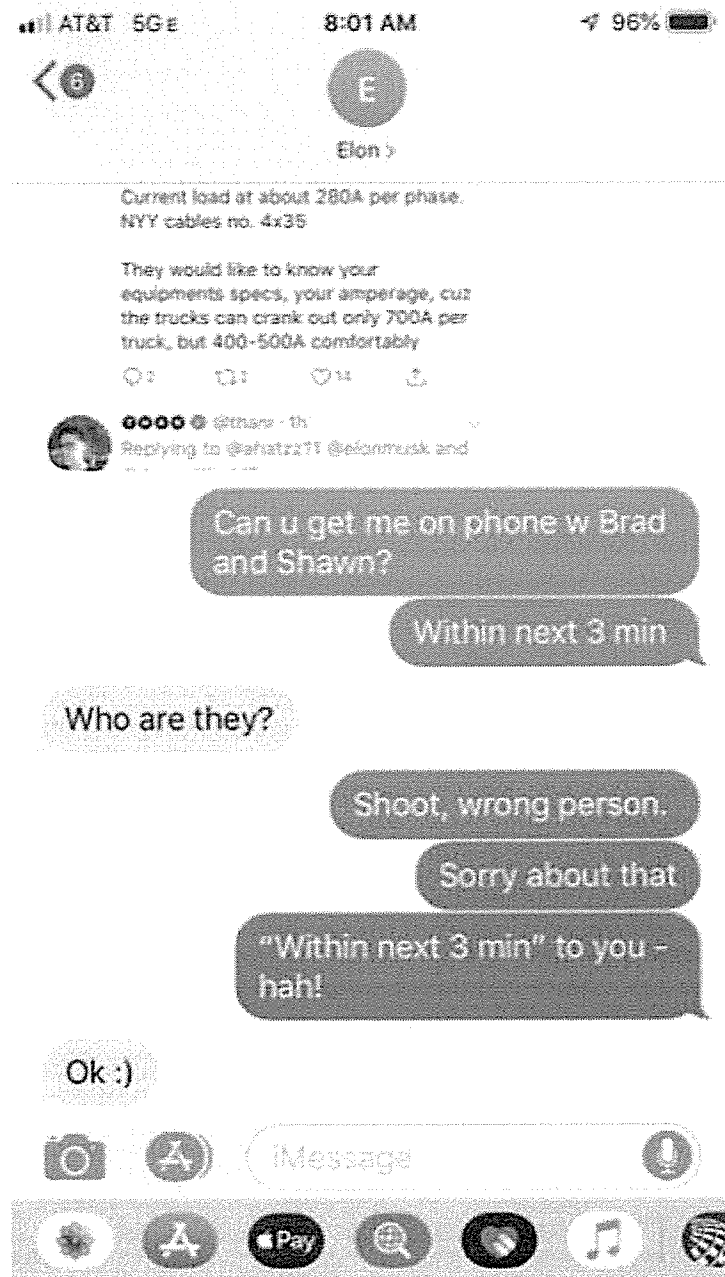


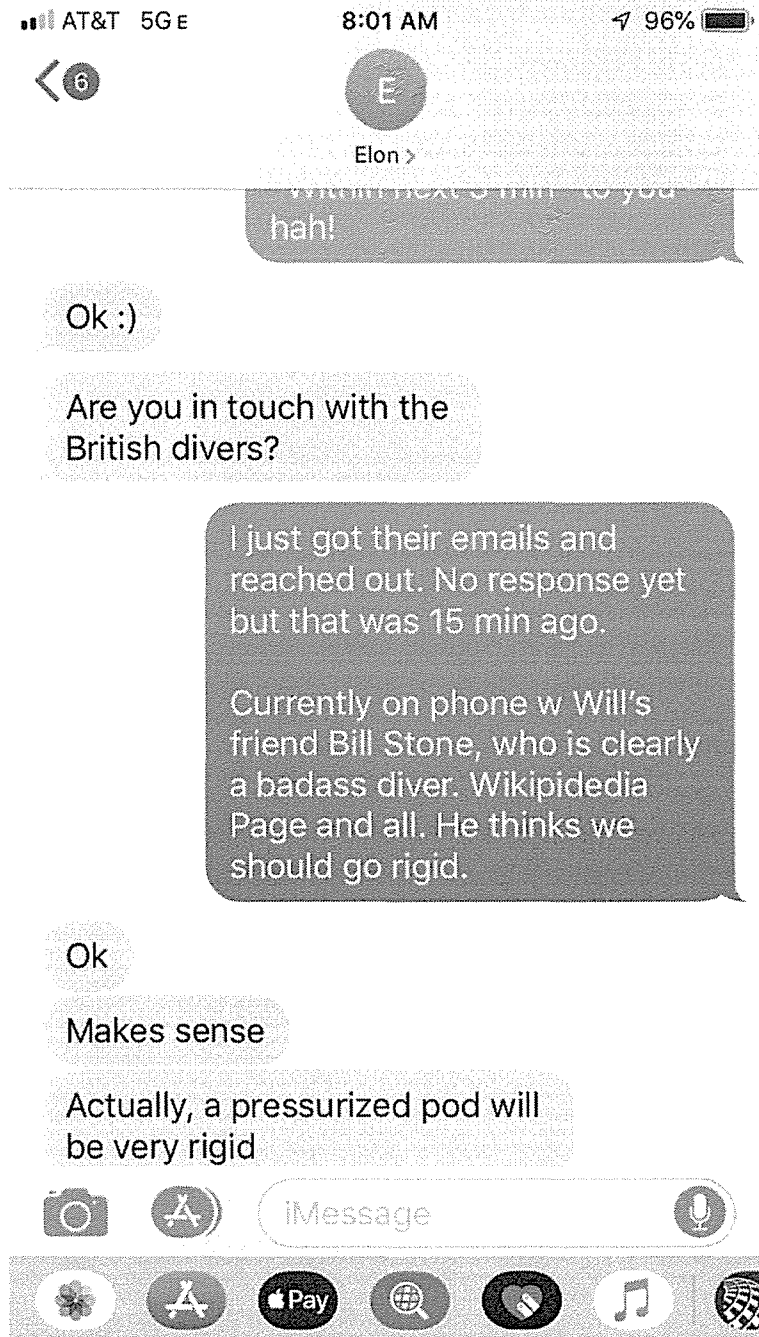


3

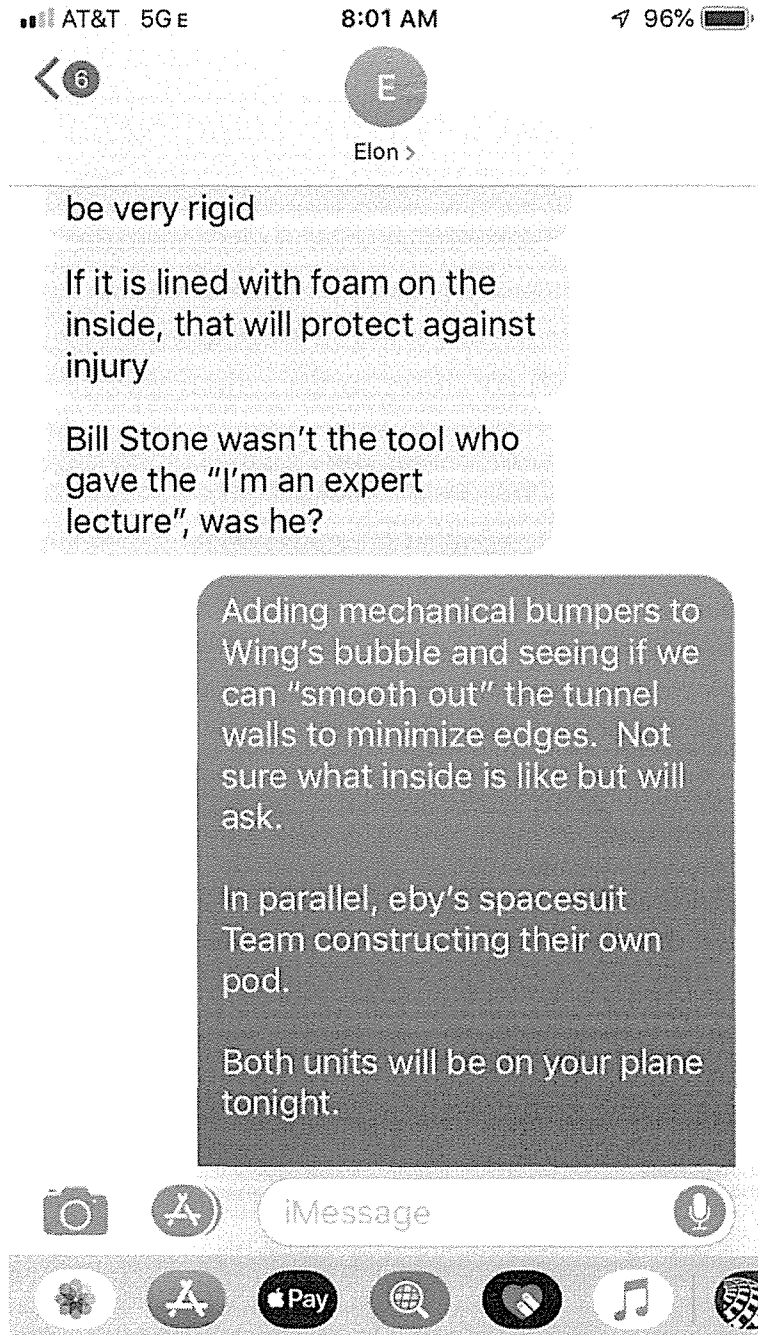




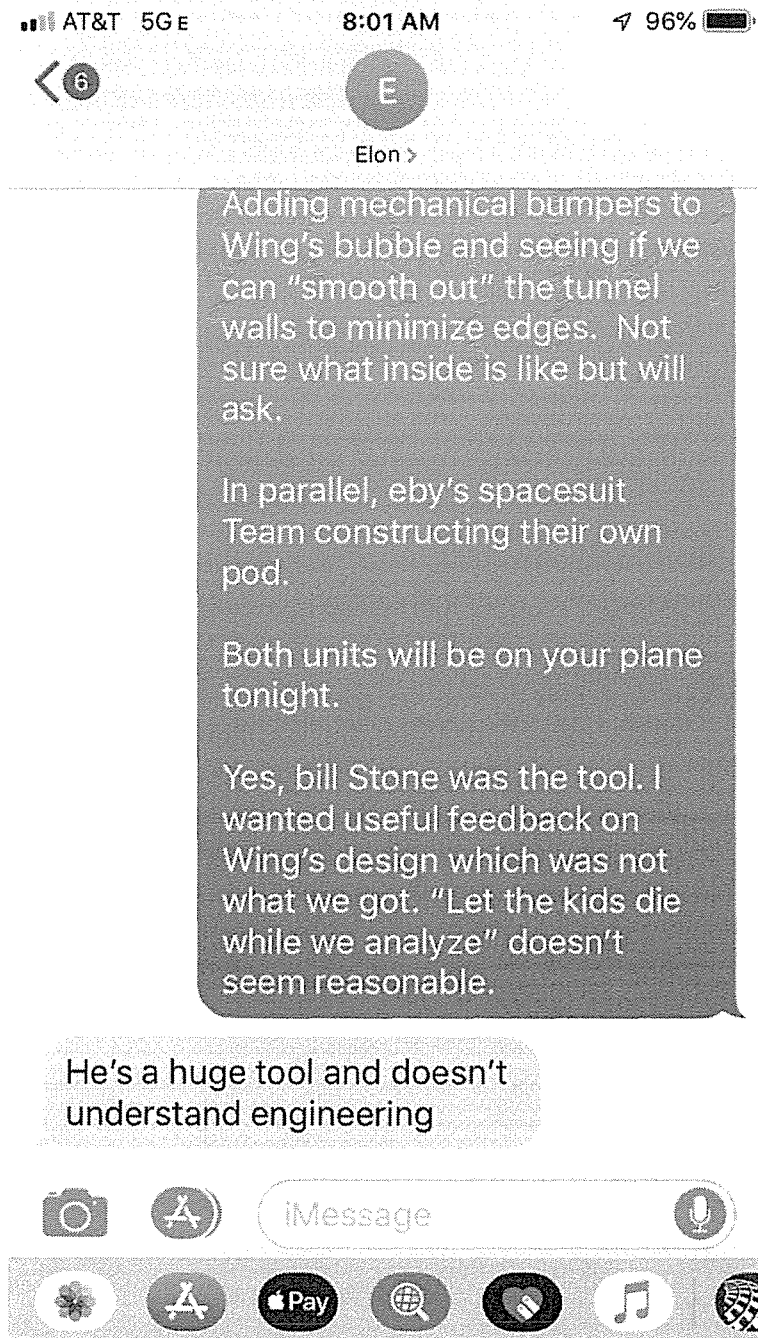




6







## **EXHIBIT 56**

## **EXHIBIT 56**

**From:** Sam Teller <steller@tesla.com>  
**Sent:** Tuesday, July 10, 2018 3:52 AM  
**To:** Jehn Balajadia <jehn@boringcompany.com>  
**Bcc:** Anna.Jones@bbc.co.uk; Heather.Chen@bbc.co.uk; Andreas.Illmer@bbc.co.uk; amanda.hodge@theaustralian.com.au; matthew.weaver@theguardian.com; Helen.davidson@theguardian.com; rperper@businessinsider.com; Michael.safi@theguardian.com; Sarah McBride <smcbride24@bloomberg.net>; Ryan.Browne@nbcuni.com; media@spacex.com; media@boringcompany.com; florence.li@spacex.com; Steve Davis <steve@spacex.com>; Press <press@tesla.com>  
**Subject:** Comments from Thai Prime Minister

---

Hello, saw your earlier coverage and just wanted to make sure you were aware of the Thai Prime Minister's comments earlier today. Thanks!

<https://www.facebook.com/thestandardth/videos/1910886279204255/>

Unofficial translation of segments of PM's press briefing, 10 July 2018

With regards to my meeting with Mr. Elon Musk last night, I have to say that I liked and admired him from the very first day that he tweeted his message with sincerity. He's a young successful man. He has businesses in satellites, aerospace, drilling and many other fields. He offered us assistance. He tweeted that he's ready to help if Thailand asked for assistance. He's ready to render support. He also tweeted that he admired our work, that we are in control of the situation, and that were helping the people efficiently. In the meantime, he's ready to help in all aspects. While returning (to Bangkok) last night, I met him in person, together with his staff, around 5 people. His private plane flew directly from the US to Chiang Rai, and took around 17 hours. I was returning (from my mission in Chiang Rai). We talked at the airport. we shook hands and greeted each other. I informed him about what we are doing in Thailand. With regards to the (cave) problem, he said he had his technology. He said that he wasn't fully ware about the conditions in Thailand and had never seen caves like these. He's ready to help but might have to adjust the tools somehow, to suit the area. The tools he brought are all useful. I saw that the capsul he showed, which can be used for people trapped in caves and rivers. We'll have to see how we can use this. He understands everything. He listened to my explanation. Last night he went deep into the caves/chambers. I believe that he probably had more ideas, innovations and products to be suggested. I asked him if he can help Thailand acquire more tools for rescue operations, but actually not just Thailand, but for ASEAN, as we share the same topography. I also said that Thailand stands ready to support any entrepreneurial interests, because his company is a big company and prominent in many areas. I also informed him about the EEC, connectivity, innovation, and Thailand's digital transformation. He said he was interested. He mentioned he had to go to China on a business trip, but if he has the time he might come back. For the equipment he kindly gave us, he left it for us to study and use. We'll see how we can make use of this. When you have a useful product, it might also be useful for another purpose as well. So there is always the possibility of it being modified and adjusted for future use. This is useful. I think it's very useful for me and for Thailand because we need to consider how to deal with other disasters in the future, not only the one we are facing now. It may be useful for other disasters, climate change, flooding, or landslides. I think of him as a friend. When he proposed to help Thailand, I told him that I stand ready to welcome him and for him to think of Thailand as his second home. He was positive. I invited him to come to Thailand, and possibly visit the EEC. We are preparing to build our satellites and he has his satellite business, and communications [technology]. Why don't we seek cooperation with him?

## **EXHIBIT 57**

## **EXHIBIT 57**



\_chat.txt

[7/6/18, 8:19:17 PM] Thailand Ground Team: Messages to this group are now secured with end-to-end encryption.  
 [7/6/18, 8:19:17 PM] +1 (616) 406-7460 created this group  
 [7/6/18, 11:28:21 PM] You joined using this group's invite link  
 [7/6/18, 11:29:43 PM] +1 (323) 430-1160: Hello  
 [7/6/18, 11:30:32 PM] Steven Davis: Hey. Update from texts before:  
 [7/6/18, 11:31:11 PM] Steven Davis: image omitted  
 [7/6/18, 11:31:38 PM] +1 (616) 406-7460: Hey, Sam!  
 [7/6/18, 11:34:45 PM] +1 (650) 533-2194 left  
 [7/6/18, 11:35:02 PM] +1 (650) 533-2194 joined using this group's invite link  
 [7/6/18, 11:35:24 PM] +1 (616) 406-7460: Is this the correct desitnation for tonight?  
 [7/6/18, 11:35:25 PM] +1 (616) 406-7460:  
<https://www.google.com/maps/place/Rocket+Rd,+Hawthorne,+CA+90250/@33.9213093,-118.3301254,17z/data=!3m1!4b1!4m5!3m4!1s0x80c2b5ded9a490b5:0x3095ae5795c500b3!8m2!3d33.9213093!4d-118.3279367>  
 [7/6/18, 11:35:57 PM] +1 (707) 484-2658: Yeah that's spacex  
 [7/6/18, 11:39:02 PM] +1 (917) 370-8640 joined using this group's invite link  
 [7/6/18, 11:40:04 PM] +1 (616) 406-7460: Thanks!  
 [7/6/18, 11:41:02 PM] +1 (908) 418-1389: A few of us on 3rd floor looking at the pod  
 [7/7/18, 12:14:25 AM] +1 (301) 233-8525: Hey folks, I'm on my computer down near Elon's desk. Flexible to relocate  
 [7/7/18, 12:16:49 AM] +1 (616) 406-7460: Who is 370-8460  
 [7/7/18, 12:17:13 AM] +1 (616) 406-7460: And 533-2194  
 [7/7/18, 12:17:36 AM] +1 (917) 370-8640: 8640 is Eby  
 [7/7/18, 12:17:52 AM] +1 (650) 533-2194: 2194 is Reyna  
 [7/7/18, 12:19:00 AM] You're now an admin  
 [7/7/18, 12:21:28 AM] +1 (616) 406-7460: 2072  
 [7/7/18, 12:21:41 AM] +1 (616) 406-7460: 0235  
 [7/7/18, 12:21:47 AM] +1 (616) 406-7460: And 0685?  
 [7/7/18, 12:25:39 AM] +1 (323) 430-1160: We are flying to LA now but are not going to continue on to Thailand until the mid-morning earliest because we need to do more development and testing on our pod. Should be at SpaceX around 1am to review.  
 [7/7/18, 12:25:54 AM] +1 (323) 430-1160: Emma can get hotels for out of towners  
 [7/7/18, 12:28:03 AM] +1 (707) 484-2658: Please let me know if you need a room!  
 [7/7/18, 12:28:33 AM] +1 (616) 406-7460: What's our current target take-off time?  
 [7/7/18, 12:31:03 AM] Steven Davis: New data:  
 [7/7/18, 12:31:25 AM] Steven Davis: Trying to learn 3 numbers:

1. Deepest water depth that they have to dive in cave  
 - 10 Ft underwater (within 1 atmosphere)
2. Longest stretch (in meters) of completely submerged tunnel  
 - 350 meters
3. Longest diving stretch (in estimated minutes of diving) of completely submerged tunnel

Page 1

MUSK\_003203



Exhibit 57  
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\_chat.txt

- 30 minutes

[7/7/18, 12:31:47 AM] Steven Davis: This was from Sam's military contact in Bangkok  
 [7/7/18, 12:32:15 AM] Steven Davis: Who got it from on the ground Thai/US military personnel

[7/7/18, 12:32:34 AM] +1 (917) 370-8640: Heard minimum passage was 70cm but also 38cm, can anyone confirm?

[7/7/18, 12:37:34 AM] +1 (616) 406-7460: Landing soon, I'll Uber to SpaceX

[7/7/18, 12:44:26 AM] Steven Davis: Bowman landed in Chiang Rai.

[7/7/18, 12:44:51 AM] Steven Davis: Trying to confirm minimum passage.

[7/7/18, 12:45:44 AM] +1 (707) 484-2658: Dave - you're welcome to go to SpaceX and work with the team or I can get you a hotel to sleep

[7/7/18, 12:47:50 AM] +1 (616) 406-7460: I'll head to SpaceX to sync with Wil. I won't need a hotel unless we're starting through tomorrow.

[7/7/18, 12:47:56 AM] +1 (616) 406-7460: Thanks!

[7/7/18, 12:49:34 AM] +1 (301) 233-8525: I'll be in the same boat as Dave and we're happy to share a hotel if we leave later in the morning. If we leave super early (like 5-7) we can just stay here

[7/7/18, 12:49:49 AM] +1 (616) 406-7460: Protip: download Google maps offline and Google translate offline to your phone

[7/7/18, 12:54:42 AM] +1 (310) 562-4292 joined using this group's invite link

[7/7/18, 12:57:32 AM] +1 (323) 430-1160: Offline maps unavailable in Chiang Rai as far as I can tell

[7/7/18, 1:18:04 AM] +1 (310) 562-4292: Emma, Nuttapon and I are in Chiang Rai. Are there hotel accommodations for tonight?

[7/7/18, 1:19:13 AM] +1 (424) 200-0382: Yes, standby

[7/7/18, 1:19:29 AM] +1 (650) 533-2194: Hotel Reservation Name: Chris Bowman

Hotel Confirmation Number: 612520

Check-In: Saturday 7/7

Check-Out: Sunday 7/8

Rooms:

1 - Chris: Grande Deluxe Pool View

Hotel Address: 221 / 2 Moo 20 Kwaewai Road, Tambon Robwieng, Amphur Muang, Chiang Rai, 57000, Thailand

Hotel Contact: +66 53 603 333

[7/7/18, 1:20:09 AM] +1 (650) 533-2194: this is for you tonight and we can extend as needed of course

[7/7/18, 1:21:16 AM] +1 (424) 200-0382: image omitted

[7/7/18, 1:25:43 AM] Steven Davis: Any typing list of questions to DOD Thai guy. Any you want to add to this list?

[7/7/18, 1:26:18 AM] Steven Davis: 1. Most importantly, cross section and length of minimum passage (for example, a 70x80 cm ellipse for 15 linear meters)?

2. Maximum water depth (we were told 10ft/1 atm, but think this might have been 10m/1atm)

3. Longest stretch of completely submerged tunnel (350 m?)

4. Longest diving duration through submerged tunnel (30 minutes?)

Page 2

MUSK\_003204

\_chat.txt

5. Has the tunnel cross section been fully scanned and mapped? If not, is the equipment available locally or could it be supplied?  
7. Minimum radius of curvature and maximum step size? Easy to answer if scanned, almost impossible if not.  
8. How useful, if at all, would it be to know their exact absolute coordinates?  
10. What features would you want to see in a pressurized pod that could be potentially deployed as a rescue vehicle?  
11. Is the main water source from the cave entrance, other entrances, or general cracks/permeability in the overall structure?  
17. Qualitatively, how prevalent are jagged edges?  
18. Is there any specific resource that would be immediately helpful?  
[7/7/18, 1:26:26 AM] Steven Davis: (I'll switch numbering)  
[7/7/18, 1:27:34 AM] +1 (616) 406-7460: It would also be good to know the current status of power available at the site.  
[7/7/18, 1:27:40 AM] +1 (616) 406-7460: And comms  
[7/7/18, 1:29:04 AM] Steven Davis: 14. What is status of communications at site (Internet, cell phone)?  
15. What is the status of power at the site (generators, voltage levels, current/power limits)?  
[7/7/18, 1:29:09 AM] Steven Davis: Look ok?  
[7/7/18, 1:29:23 AM] +1 (616) 406-7460: Perfect! Thanks!  
[7/7/18, 1:32:58 AM] +1 (616) 406-7460: Reading some of the articles, it looks like the water levels may increase. I'm guessing they don't have any hard guesses, but it's something to keep in mind when we get the answers to (above)  
[7/7/18, 1:42:09 AM] +1 (616) 406-7460: I'll at SpaceX on the third floor. Where should I go?  
[7/7/18, 1:42:47 AM] +1 (616) 406-7460: I'm\*  
[7/7/18, 1:43:00 AM] +1 (818) 903-0235: Security bringing you to us  
[7/7/18, 1:44:02 AM] +1 (616) 406-7460: Copy!  
[7/7/18, 1:52:21 AM] +1 (310) 956-5308: This is Vince. I will be in Chiang Mai in ~6 hours (10:30 pm local). Anyone know of a good option to get to Chiang Rai that late at night?  
[7/7/18, 1:55:26 AM] +1 (818) 903-0235: You need to book a car or stay over and catch a hopper flight in the morning.  
[7/7/18, 1:55:41 AM] +1 (818) 903-0235: I can connect you with someone in travel to see if they can help  
[7/7/18, 1:57:58 AM] Steven Davis: Chris just reported that the "French scanned the tunnel 10 years ago". If we can get that data (assume unlikely), cool.

My logic is that if we have the scan, we can load into Matlab and verify our Pod shale won't interfere. No risky fit check needed. But they have no motivation to scan as the data doesn't change their rescue plans of either pumping or dry or having the kids swim/dive.

Am going to get us a scanner to leave this option open.

[7/7/18, 1:58:12 AM] Steven Davis: \*Pod shape  
[7/7/18, 1:59:01 AM] +1 (310) 562-4292: Sounds like we can get the file, but there's doubt on the scale

\_chat.txt

[7/7/18, 2:11:34 AM] Steven Davis: As sent:

[7/7/18, 2:11:40 AM] Steven Davis: On Jul 7, 2018, at 4:37 AM, Steve Davis  
<Steve@spacex.com> wrote:

Thank you for your assistance. A list of questions are below. Number 1 is by far the most important.

1. Most importantly, cross section and length of minimum passage (for example, a 70x80 cm ellipse for 15 linear meters)?
  2. Maximum water depth (we were told 10ft/1 atm, but think this might have been 10m/1atm)
  3. Longest stretch of completely submerged tunnel (350 m?)
  4. Longest diving duration through submerged tunnel (30 minutes?)
  5. Has the tunnel cross section been fully scanned and mapped? If not, is the equipment available locally or could it be supplied?
  6. Minimum radius of curvature and maximum step size? Easy to answer if it has been scanned, ignore question if not.
  7. How useful, if at all, would it be to know the kids' exact absolute coordinates?
  8. What features would you want to see in a sealed pressurized pod that could be potentially deployed as a rescue vehicle (kids would stay dry within the pod with no regulator or equivalent)?
  9. Is the main water intrusion source from the cave entrance, other entrances, or general cracks/permeability in the overall structure?
  10. Is there any specific known resource that would be immediately helpful if provided?
  11. What is status of communications at the site (Internet, cell phone)?
  12. What is the status of power at the site (generators, voltage levels, current/power limits)?
- [7/7/18, 2:11:55 AM] Steven Davis: Will post response if received.
- [7/7/18, 2:15:57 AM] Steven Davis: For the Hawthorne team, if there is ANYTHING you need tomorrow, please tell me. Mechanical technicians, machinists, etc.
- [7/7/18, 2:23:54 AM] +1 (310) 562-4292: Found this map of the cave and mountain. I'm being told the cave entrance to top of mountain is ~700M  
[https://mobile.twitter.com/Thai\\_Talk/status/1011922745632776193](https://mobile.twitter.com/Thai_Talk/status/1011922745632776193)
- [7/7/18, 2:26:01 AM] +1 (310) 562-4292: image omitted
- [7/7/18, 3:05:17 AM] +1 (310) 562-4292: The cave water is primarily from ground water and cracks in the limestone. They did find an aquifer down the hill and will start pumping it soon
- [7/7/18, 3:20:58 AM] +1 (310) 562-4292: image omitted
- [7/7/18, 3:20:58 AM] +1 (310) 562-4292: image omitted
- [7/7/18, 3:22:00 AM] +1 (310) 562-4292: Approx 12 smaller pumps throughout the site
- [7/7/18, 3:24:09 AM] +1 (310) 562-4292: Water level decreased 40cm over 2 dryish days 1.5 km inside the cave. Really hard to tell if this can keep up with a week of rain.
- [7/7/18, 3:28:07 AM] +1 (310) 562-4292: image omitted
- [7/7/18, 3:39:23 AM] +1 (323) 430-1160: Speaking to diver now....jumbled notes:

Before you get to water there are 3 giant rooms, 60 feet of hands and feet climbing,

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chat.txt  
small sumps in between, 1.5 hours to get to diving part, diving part is 2.3 km,  
total journey is 4km  
2 feet by 10 feet is narrowest point  
Full face masked with positive pressure  
Teaching them to dive  
Oxygen level is at 15% and dropping  
Normally 80% replacement with CO2  
Tubes over 2.3km will take a lot of time  
Fixed static line is all the way to the chamber so can pull  
Full face masks is easiest solution  
Sedatives probably out because they slow down respiratory functions  
3-4 days from now they'll probably be dead based on oxygen  
British cave diver egos, invited by the governor - Thai media pretty crazy  
3-4 divers from Ben's team are in there preparing inside but Ben has been barred for  
entering  
Windy cave, up and down, pressure differences, long galleys with breathable air -  
diving part is less and less with pumps, it's now 50  
Small parts 3-5m depth  
Other than 3 restricted areas its open free swimming - 2 feet high, kids are pretty  
skinny - tallest kid is 1m60cm approx  
50 minutes to get out, going with the flow (vs 3 hours to get in)  
[7/7/18, 3:40:37 AM] +1 (323) 430-1160: Ben Reymenants - Belgian but has lived in  
Thailand for 17 years  
[7/7/18, 3:45:57 AM] +1 (323) 430-1160: He actually thinks the rigid metal tube  
would work as long as less than 2 feet  
[7/7/18, 3:46:09 AM] +1 (323) 430-1160: Diameter  
[7/7/18, 3:47:51 AM] +1 (323) 430-1160: He filmed the whole thing and brought a  
GoPro along !!!  
[7/7/18, 4:01:32 AM] +1 (323) 430-1160: Will upload and send to us  
[7/7/18, 4:04:28 AM] Steven Davis: Awesome  
So tallest kid is 5'3"  
And looking good on 18" dm Pod

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\_chat.txt

[7/7/18, 4:07:27 AM] +1 (863) 206-0685: Mike Coryell here- How concerned are we on the O2 level? Do we need to rapid deploy some powerwall packs with CO2 scrubbers?  
 [7/7/18, 4:11:53 AM] +1 (323) 430-1160: image omitted  
 [7/7/18, 4:15:23 AM] +1 (301) 233-8525: Great info Sam! Thanks to Ben.  
 [7/7/18, 4:15:35 AM] +1 (301) 233-8525: On the Powerwall side, The thinking so far is the effort of bringing Powerwalls all the way into the cave where they would be able to run equipment of that sort is likely to be prohibitively difficult. To run scrubbers you would need to be in the same air cavity.  
 [7/7/18, 4:18:00 AM] Steven Davis: Also note that other diver (Richard) requested O2 instead of air for kids. Standard pros/cons to that one.  
 [7/7/18, 4:23:16 AM] Steven Davis: Useful visualization someone tweeted at E: <http://geo-nred.nu.ac.th/3d/nangnonweb/satimg/satimg.html>  
 [7/7/18, 4:27:17 AM] +1 (310) 562-4292: Older French survey has not been verified, but not disproven. However the same French group did another cave nearby and it was good. 2d prints and handwritten notes  
 [7/7/18, 4:35:04 AM] +1 (310) 562-4292: Can someone look into "cave link"? It's a locator for finding lost people. Could it be sent in with a diver to determine drilling coordinates?  
 [7/7/18, 4:39:45 AM] Steven Davis: We will look into it.

Note that we had a solution for surveying from when this started. Surveying equipment and scanners for dry portions and then we had a company which does underwater surveying and scanning (Virtual Wonders) ready to go. Could possibly use IMUle for some portions, though didn't seem necessary if the underwater equipment worked.

As a risky backup, could do an acoustic survey (make noise in cave and triangulate w seismometers). Have a team ready for that one too.

This is a similar problem that we use in the the tunnel itself except the water complicates it. But we are good over 2 miles to a few centimeters.

[7/7/18, 4:42:07 AM] Steven Davis: Cavellink seems to just be a subsurface comms system:  
 [7/7/18, 4:42:10 AM] Steven Davis: [http://www.cavellink.com/cl3x\\_neu/index.php/en/](http://www.cavellink.com/cl3x_neu/index.php/en/)  
 [7/7/18, 4:43:43 AM] +1 (310) 562-4292: The cave expert says the smallest opening is elliptical should, 98 x 95 cm  
 [7/7/18, 4:44:41 AM] Steven Davis: Thanks. Inconsistent w what Diver Ben said above at 300x60 cm  
 [7/7/18, 4:46:42 AM] +1 (323) 430-1160: Steve feel free to message Ben thru Skype - he seems pretty responsive  
 [7/7/18, 5:03:30 AM] Steven Davis: Just talked to Bowman. They are seriously considering drilling. And might be only using the maps from 20 years ago. We have a TACS survey/guidance system in Hawthorne right now that we use for tunnel surveying that could at least do all the dry parts and reduce that portion of the error.

Bowman is going to drilling meeting now and will report back after.

[7/7/18, 5:21:01 AM] +1 (310) 562-4292: Does anyone have Flo's flight info to Chiang Rai?

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[7/7/18, 5:21:17 AM] +1 (323) 430-1160: I think same as yours one day later  
 [7/7/18, 5:23:10 AM] +1 (863) 206-0685: Steve, just to start prepping and thinking on the drilling side. What kind of power are you needing? Is it only engine driven or any electric driven?  
 [7/7/18, 5:25:00 AM] +1 (310) 562-4292: image omitted  
 [7/7/18, 5:31:19 AM] Steven Davis: My guess is a local mining company would drill so Bowman will have to provide info on what is needed to power their specific rigs.

We are standing by to see if we need to survey this for them.

[7/7/18, 5:34:30 AM] +1 (310) 562-4292: Chevron and one British company are here to handle the drilling

[7/7/18, 5:37:36 AM] Steven Davis: In Hawthorne, Greg Johnson is available to provide machinists today to help build the escape cocoon/Pod. He is awake, so should chat w Chris E and Team when ready. Greg is awesome and is at 949-632-4046 if any mechanical fab stuff for any reason is needed today.

[7/7/18, 5:48:19 AM] +1 (310) 562-4292: Is the power pack coming to Bangkok first?

[7/7/18, 7:33:57 AM] +1 (917) 370-8640: I'll send drawings over to Greg for the aluminum pod

[7/7/18, 7:35:06 AM] +1 (650) 796-6296 joined using this group's invite link

[7/7/18, 8:02:40 AM] +1 (785) 764-0421: After picking up the remaining inflatables in SF do stay the route and fly commercial or meet the jet in LA? Need a decision in an hour.

[7/7/18, 8:50:28 AM] Steven Davis: mike - Per chat, please fly to LAX

[7/7/18, 8:52:54 AM] +1 (707) 484-2658: Spoke with mike, he'll land at lax at 3pm and join E's plane

Latest from sam was 6pm departure from lax to Thailand for E's plane

[7/7/18, 8:55:24 AM] +1 (310) 956-5308: Update on my status for those I haven't chatted with already.

En route from Chiang Mai airport to Chiang Rai by van. Checking into hotel and meeting Bowman and Nuttapon in the lobby at 830am.

[7/7/18, 9:57:22 AM] +1 (310) 562-4292: Emma, the hotel here may not be able to get

[7/7/18, 9:57:44 AM] +1 (310) 562-4292: Enough rooms past the 9th. Can you look into options?

[7/7/18, 10:05:29 AM] Steven Davis: Bowman just briefed me and had tons of useful info. Summarizing till he gets to computer:

[7/7/18, 10:05:52 AM] Steven Davis: 1. Is likely they start trying to get the kids out in the next 6-12 hrs as determined by PM

[7/7/18, 10:05:59 AM] Steven Davis: 2. Would use buddy scuba system

[7/7/18, 10:06:15 AM] Steven Davis: 3. Super risky and doubt on whether it will work

[7/7/18, 10:06:39 AM] Steven Davis: 4. Will take 1 day per kid so this will take 2 weeks

[7/7/18, 10:07:04 AM] Steven Davis: 5. Full steam ahead on our Pod. Will be infinitely safer than this if it works.

[7/7/18, 10:07:28 AM] Steven Davis: 6. In parallel, they are trying to drill in and drain the water

[7/7/18, 10:07:42 AM] Steven Davis: 7. They have no survey data and are "drilling

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blind"

[7/7/18, 10:08:20 AM] Steven Davis: 8. This shocks me that they don't have a surveyor but we are mobilizing one right now w a total station, targets, and laser scanner. That will cover the land portion.

[7/7/18, 10:08:53 AM] Steven Davis: 9. Might also mobilize the water survey team tho likely less useful, based on additional data

[7/7/18, 10:09:19 AM] Steven Davis: ITEMS 1 AND 2 ARE CONFIDENTIAL

[7/7/18, 10:13:55 AM] +1 (310) 956-5308: Do we know what is limiting the pumping capability? (Size/number of pumps/hoses, size of hole in the ground, power, a place to put the water...)

[7/7/18, 10:48:22 AM] Steven Davis: To my knowledge, getting pumps and power sources for the pumps to the water source. Bowman would know better.

[7/7/18, 10:57:18 AM] +1 (650) 533-2194: To answer Chris's earlier question about the hotels, we have 7 rooms for tonight (July 8th) at Le Meridian where Chris is staying that anyone on the ground can use. Emma and I are working on getting hotels elsewhere that begin on July 9th.

Hotel Reservation Name: Justin Riblet

Hotel Confirmation Numbers: 612523 / 612525 / 612626 / 612527 / 612528 / 612529 / 612530

Rooms: (7) Grande Deluxe Pool View

Hotel Address: Le Meridian Chiang Rai - 221 / 2 Moo 20 Kwaewai Road, Tambon Robwieng, Amphur Muang, Chiang Rai, 57000, Thailand

Hotel Contact: +66 53 603 333

[7/7/18, 11:00:03 AM] +1 (863) 206-0685: I called friends and found 2MW of generation coming over to Bangkok from Beyoncé Tour. I can help get some pumps, just tell me where they are and could pick them up @13109565308 @13105624292

[7/7/18, 11:00:06 AM] +1 (310) 562-4292: I have some pictures earlier of the pumps. ~12 small self powered generators and 2 big ones. Nobody had GPM numbers, just the cave water level.

[7/7/18, 11:05:21 AM] +1 (310) 562-4292: Can we export 3D data off this device? Has anyone used it before?

<http://www.soundmetrics.com/Products/ARIS-Sonars/ARIS-Explorer-3000>

[7/7/18, 11:05:44 AM] Steven Davis: We are in contact w those guys now

[7/7/18, 11:11:50 AM] Steven Davis: Also google the Leica Pegasus backpack

[7/7/18, 11:31:49 AM] Steven Davis: 2 Land surveyors are officially onboard.

Emma/Elissa - I will get you their info shortly. And a list of all equipment they are bringing.

[7/7/18, 11:46:01 AM] +1 (785) 764-0421: I got an earlier flight down to lax from sfo and land at 1pm. Emma I'll get with you on transport details of the additional 8 bubbles to the jet.

[7/7/18, 11:53:49 AM] +1 (707) 484-2658: Great, text me and I'll sort your transport to the plan to drop them

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[7/7/18, 12:07:14 PM] Steven Davis: Plane Team - when in plane, you might want to look at what the TbC team packed of accessible; if not, can do it in Thailand. We popped in a lot of tools including an underwater grinder, so will be good to know inventory.

[7/7/18, 12:34:20 PM] +1 (785) 764-0421: Copy, will build a sheet

[7/7/18, 12:44:31 PM] +1 (785) 764-0421: Bowman, do they have closed face SCUBA respirators available?

[7/7/18, 1:28:33 PM] +1 (301) 233-8525: Aside: Dave and I (Will) are back at SpaceX near the exec area

[7/7/18, 1:29:10 PM] Steven Davis: Cool. Also, Mauro will be dropping off some LIOH canisters to pop on the plane.

[7/7/18, 1:29:38 PM] +1 (323) 430-1160: Pushing departure to 11pm for airport restrictions

[7/7/18, 1:30:05 PM] +1 (616) 406-7460: Please let us know if there is anything that can be lifted, moved, seam ripped, procured, cleaned, or set up.

[7/7/18, 1:36:49 PM] Steven Davis: Yeah, we need a bathtub to test this thing. Can you call?

[7/7/18, 1:36:58 PM] Steven Davis: I'm 3102452197

[7/7/18, 1:40:17 PM] +1 (818) 903-0235: Hey team - Our cargo hold is getting pretty full. We can put some stuff in the aisles and main cabin but we're nearly at cap before any of the surveyors equipment or the pods. Can Mike or someone pop by the plane and do an assessment of what we currently have so we can shuffle things off as needed?

[7/7/18, 1:41:12 PM] +1 (818) 903-0235: Tesla Team - Aaron Nutten May have some insight as to what's in the pelican cases and you can call him to debrief what's critical there

[7/7/18, 1:41:25 PM] +1 (818) 903-0235: Just want to make sure we're prioritizing and then adding our nice to haves

[7/7/18, 1:43:36 PM] Steven Davis: Thanks and agreed. Mike is inventory'ing and we will remove stuff at last minute based on what is important at that last moment.

[7/7/18, 1:44:23 PM] Steven Davis: Dave and Mike are working to find/build a bathtub - to test this thing underwater before we ship

[7/7/18, 1:44:39 PM] +1 (818) 903-0235: Mike - can I connect you with the flight team to go there in advance? It's packed full currently so checking now (or before we're about to go wheels up) so that we have that knowledge would be helpful.

[7/7/18, 1:53:27 PM] +1 (323) 430-1160: I have a pool at 1417 Kellam Ave that is 10 ft deep at deep end

[7/7/18, 1:53:37 PM] +1 (323) 430-1160: If that helps we can go use it

[7/7/18, 1:55:36 PM] Steven Davis: Thanks. Looking at using a dumpster or a muck car :)

[7/7/18, 1:58:31 PM] +1 (707) 484-2658: Mike A landed in la and should be arriving at the fbo now with the 8 bubbles. I put him in touch with the crew.

[7/7/18, 2:08:40 PM] +1 (323) 430-1160: Mike C is flying from Miami landing LAX 10:20 and will join flight

[7/7/18, 2:18:08 PM] +1 (408) 203-2072: This is Flo. Just landed in Hong Kong

[7/7/18, 2:18:47 PM] +1 (908) 418-1389: What is actual ID of pod, at boring company looking at a "pool to submerge" but want good estimate of ballast

[7/7/18, 2:21:53 PM] +1 (650) 796-6296: Can you all send inventory when you have it?

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Email is ok. I want to be sure rescuers in Chiang Rai know what is coming. This is Zach - getting there in about 5 hrs.

[7/7/18, 2:24:34 PM] +1 (917) 370-8640: 14.8in id x 66in length, 410lb ballast I think

[7/7/18, 2:25:58 PM] +1 (616) 406-7460: Are we designing a ballast system on to it or in it?

[7/7/18, 2:26:48 PM] +1 (616) 406-7460: We can get railroad rail sections from the boring company guys

[7/7/18, 2:26:52 PM] +1 (917) 370-8640: We're starting by strapping dive weights to the outside

[7/7/18, 2:27:25 PM] +1 (616) 406-7460: Copy that

[7/7/18, 2:27:37 PM] +1 (616) 406-7460: Do we need to find ballast for this test?

[7/7/18, 2:29:29 PM] +1 (917) 370-8640: A couple hundred pounds would be nice so a couple people could get it submerged

[7/7/18, 2:33:14 PM] +1 (616) 406-7460: They're filling a muck car for us now

[7/7/18, 2:44:20 PM] Steven Davis: For the whole team, important.

Whatever we build, we need to prove to the world and Thai government how this works and that this is safe. Therefore:

1. We will need videos (iphone is fine) showing someone getting in and it closing, showing it submerged w a person, etc.
2. Data showing pressure profile over 75 minutes

They will be very hesitant to let us use this and we will need to Test more when there, but let's start building our case now.

[7/7/18, 2:55:33 PM] +1 (917) 370-8640: We'll need a small volunteer

[7/7/18, 2:55:53 PM] +1 (616) 406-7460: Just talking to Chris, if at all possible, we should make two.

[7/7/18, 2:59:10 PM] +1 (818) 903-0235: Do you need help finding someone Chris? If so, what's our ideal size and I can try find.

[7/7/18, 3:04:34 PM] Steven Davis: We have 80+ feet of 36" dm steel ducting at boring company.

Feel free to use it. Zach pointed out it would be awesome to submerge them and put the Pod through the tube just like a tunnel

[7/7/18, 3:05:49 PM] +1 (917) 370-8640: I'll do a test fit with Erik Kraus

[7/7/18, 3:05:52 PM] +1 (650) 796-6296: If have welders and folks that can fabricate metal in launch if needed to support that sort of more representative testing.

[7/7/18, 3:15:04 PM] +1 (908) 418-1389: Getting some launch welders now

[7/7/18, 3:15:23 PM] +1 (616) 406-7460: I think we can use the three duct sections to set up a test tunnel

[7/7/18, 3:15:42 PM] +1 (616) 406-7460 added +1 (516) 587-3899

[7/7/18, 3:16:00 PM] +1 (616) 406-7460: image omitted

[7/7/18, 3:17:58 PM] +1 (917) 370-8640: Erik fits and is pretty comfortable testing

[7/7/18, 3:18:44 PM] +1 (616) 406-7460: image omitted

[7/7/18, 3:21:08 PM] +1 (616) 406-7460: The muck car test tank is filling up for testing

[7/7/18, 3:33:30 PM] Steven Davis: If we can get 2 on plane and then build 2 for

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testing, would be awesome. Will H. suggested we do a 10-m depth test tomorrow in ocean while plane is in air on Unit 3.

[7/7/18, 3:33:57 PM] Steven Davis: Kenton can provide machinists and welders (thanks, Zach!)

[7/7/18, 3:40:34 PM] +1 (908) 418-1389: We have a three heading to boring company now

[7/7/18, 3:51:26 PM] +1 (408) 203-2072: Simple comms in pod would go along way to keeping kids calm. Some type of diver comm system that we could get?

[7/7/18, 3:51:55 PM] +1 (616) 406-7460: It would probably have to be called comms

[7/7/18, 3:52:00 PM] +1 (616) 406-7460: Cabled\*

[7/7/18, 3:54:41 PM] +1 (408) 203-2072:

[https://www.divers-supply.com/buddy-phone-for-guardian-2-channels.html?utm\\_source=adwordsfroogle&utm\\_medium=cpc&utm\\_campaign=adwordsfroogle&utm\\_content=OTS-900401-000&clid=Cj0KCQjwyYHaBRDvARIsAHKAXcsuUPc8RyKEb-TeirHZ7v8RC08p8aw58SLmFWLcWF03pT4D-rWShRcaAv8aEALw\\_wcB](https://www.divers-supply.com/buddy-phone-for-guardian-2-channels.html?utm_source=adwordsfroogle&utm_medium=cpc&utm_campaign=adwordsfroogle&utm_content=OTS-900401-000&clid=Cj0KCQjwyYHaBRDvARIsAHKAXcsuUPc8RyKEb-TeirHZ7v8RC08p8aw58SLmFWLcWF03pT4D-rWShRcaAv8aEALw_wcB)

[7/7/18, 3:56:32 PM] +1 (408) 203-2072: Could something like that work ? Maybe they already have some of that gear there.

[7/7/18, 4:31:56 PM] +1 (616) 406-7460: image omitted

[7/7/18, 5:00:33 PM] +1 (616) 406-7460 added +1 (626) 755-4370

[7/7/18, 5:02:50 PM] +1 (616) 406-7460 added +1 (508) 380-5582

[7/7/18, 5:03:42 PM] +1 (616) 406-7460 added +1 (808) 371-7888

[7/7/18, 5:09:50 PM] +1 (908) 418-1389: Vince, bowman, zach: in touch with pioneer pump rep in Thailand, they have pumps to send if needed, is there crane to offload? Is it needed?

[7/7/18, 5:10:31 PM] +1 (310) 956-5308: Awesome. Thanks Chris. Will find out if bowman doesn't know.

[7/7/18, 5:12:55 PM] +1 (616) 406-7460: Will D, Mike A, I've heard that the plane is pretty full, do we have a primary for the plane loading, and would it benefit is to send a few folks over to do a re-packing to try and make more room?

[7/7/18, 5:14:17 PM] +1 (301) 233-8525: I can volunteer for that effort if someone can guide me there. To my knowledge Mike has already done an assessment

[7/7/18, 5:14:26 PM] Steven Davis: From Tom N in machining:

[7/7/18, 5:14:37 PM] Steven Davis: Ok buddy-just spoke to just about everyone involved about this and it's going to be close but looks like we'll have the 1st two units done ready by around 10pm...

We are also working on the other 2 units and should have at least one tomorrow around noon

[7/7/18, 5:15:14 PM] Steven Davis: First 2 ship to Thailand, 3rd is for test while plane is in air, and 4th is for test if we break the 3rd and need to change something.

[7/7/18, 5:18:01 PM] +1 (917) 370-8640: I think we'll have 1 ready for the flight, 2nd will be difficult to weld and test in time if we get parts at 10

[7/7/18, 5:28:34 PM] +1 (323) 430-1160: We can leave a little later if needed

[7/7/18, 5:37:53 PM] Steven Davis: IMPORTANT. We just received the GoPro video of the whole tunnel. Will send out link in a second.

[7/7/18, 5:38:12 PM] Steven Davis: Shoot, not whole tunnel but a portion. Still useful

[7/7/18, 5:38:44 PM] +1 (323) 430-1160:

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<https://www.dropbox.com/s/wj22dqn18dk9jvi/GOPR9784.MP4?dl=0>  
 [7/7/18, 5:38:48 PM] Steven Davis: Do not distribute it  
 [7/7/18, 5:38:51 PM] +1 (323) 430-1160: Do not post publicly  
 [7/7/18, 5:39:06 PM] Steven Davis: And let us know if there are access issues and we can post on GDrive  
 [7/7/18, 5:39:33 PM] +1 (323) 430-1160: Dropbox won't work on SpaceX wifi  
 [7/7/18, 5:39:41 PM] +1 (323) 430-1160: Use data or guest  
 [7/7/18, 5:43:31 PM] Steven Davis: Also, Chris made a fit check Pod along with the functional Pods. The fit check Pod is also aluminum but is thin (30 mil?). If it gets stuck, it can be crushed in place. Chris, please correct me if that is wrong.

So we will ship 1 fit check Pod, and 1-2 real ones tonight.

And Mike A has 02 sensors if we do want to put them in the Pod w each kid.

[7/7/18, 5:45:21 PM] +1 (626) 755-4370: I'm making a fit check pod right now  
 [7/7/18, 5:45:31 PM] +1 (626) 755-4370: Let me know if there is already one existing  
 [7/7/18, 5:45:52 PM] +1 (626) 755-4370: It's galvanized steel ducting and split down the side so it will collapse if stuck  
 [7/7/18, 5:46:13 PM] +1 (917) 370-8640: Sounds like the same one that was at Ryan's desk

[7/7/18, 5:47:15 PM] +1 (626) 755-4370: Yes  
 [7/7/18, 5:47:21 PM] +1 (626) 755-4370: We're in prop end fanning  
 [7/7/18, 5:47:24 PM] +1 (626) 755-4370: Dabbing  
 [7/7/18, 5:47:28 PM] +1 (626) 755-4370: Fabbing  
 [7/7/18, 5:49:16 PM] +1 (323) 430-1160: Another video:  
<https://www.dropbox.com/s/rr1iz0uqajqafg0/GP029840.MP4?dl=0>  
 [7/7/18, 5:53:38 PM] +1 (785) 764-0421: Do we still need the power pack adapters? If not I'll take them off the plane to create more seat space.

[7/7/18, 5:56:12 PM] +1 (323) 430-1160:  
<https://www.dropbox.com/s/27u5yn8bf7rbyk0/GOPR9784%20%281%29.MP4?dl=0>  
 [7/7/18, 5:56:21 PM] +1 (323) 430-1160: I think we can ditch them  
 [7/7/18, 6:03:33 PM] +1 (785) 764-0421: Ok, removing the adapters  
 [7/7/18, 6:05:12 PM] +1 (323) 430-1160: image omitted  
 [7/7/18, 6:13:50 PM] +1 (626) 755-4370: Possibly known as theodolite  
 [7/7/18, 6:16:53 PM] +1 (301) 233-8525: Can someone speak to the electrical situation and needs? The more I hear about this the more it seems that this isn't holding the rescue effort back. If that is the case, then I fear that the Powerwalls and general changes to the electricity plan may get in the way more than it would help.

[7/7/18, 6:17:32 PM] +1 (301) 233-8525: Here are some specific questions for guidance:

1. At the Cave Entrance?
  - a. Is there reliable power?
  - b. How many kW or MW of generation capacity is on site?
2. Power line run
  - a. How deep into the cave is there electricity available?
  - b. What is preventing access deeper into the cave? Voltage Drop, Electrical conductors, manpower, electrical safety concerns, flooding, or simply



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mechanical access?

c. How valuable would it be to improve power quality (Ex: higher voltage, or more motor driving force)

d. How valuable would it be to get deeper into the cave?

3. At the Diver's forward operating base:

a. Is there power of any sort?

b. If there isn't power, how much of a value add would it be?

4. What is the pumping situation like inside the cave?

a. How deep into the cave are pumps?

b. Are they effective?

c. What is preventing them from going further? Mechanical access, electricity?

5. If more power were available (ex: operating Powerwalls), what equipment would be run?

a. Lights? Pumps? Charging of equipment (flashlights, power tool batteries)

[7/7/18, 6:34:34 PM] +1 (310) 562-4292: The short answer is Power hasn't come up as a problem. The pumping issue is getting to the deeper portions of the cave. There's several P traps... however once heavy rain hits there's no downside to more pumping capacity

[7/7/18, 6:58:13 PM] +1 (650) 796-6296: On the ground in Chiang Rai. Talking to them about transport now.

[7/7/18, 7:00:10 PM] +1 (424) 200-0382: Nuttapon should be there to assist with transport

[7/7/18, 7:00:26 PM] +1 (650) 796-6296: Thank you. I'll find him

[7/7/18, 7:07:12 PM] +1 (323) 430-1160: Huge folder of files

<https://www.dropbox.com/sh/svu162v0dlc2uvx/AABZRk3HmYgPAHP2raB2N3PEa?dl=0>

[7/7/18, 7:10:02 PM] +1 (650) 796-6296: Nuttapon says that the survey equipment would be useful. Previous data is lousy and he does not think better is happening

[7/7/18, 7:10:15 PM] +1 (650) 796-6296: He says they have good x,y but z data is no good

[7/7/18, 7:10:39 PM] +1 (650) 796-6296: Don't know depths

[7/7/18, 7:14:19 PM] Steven Davis: Thanks. Tons of ways to get just Z. Get 2 altimeters in there and read at same time in 100 ft increments.

What about the surveyor in Bangkok?

[7/7/18, 7:16:42 PM] +1 (650) 796-6296: Sounds uncertain to me. Some talk of maybe from a university, but unclear if it will happen. If not crazy to bring I'd say bring it.

[7/7/18, 7:17:22 PM] Steven Davis: Is the problem of finite seats. 2 surveyors or 2 engineers.

[7/7/18, 7:17:30 PM] Steven Davis: Separately, Ben the diver is available to Skype

[7/7/18, 7:17:47 PM] Steven Davis: I just talked to him. He is the one who found the kids and sent us videos.

[7/7/18, 7:17:55 PM] Steven Davis: I'd like both teams to speak w him.

[7/7/18, 7:18:05 PM] Steven Davis: (Team in Thailand and Team building Pod)

[7/7/18, 7:21:31 PM] +1 (785) 764-0421: All parts are to the machine shop from water jet

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[7/7/18, 7:22:30 PM] +1 (323) 430-1160: Desell Suanburi fscidss@ku.ac.th  
+66814969744

He may know about the surveying equipment needed

[7/7/18, 7:37:43 PM] +1 (310) 562-4292: Does anyone know of a altimeter that isn't pressure based? It could be difficult with the different bays

[7/7/18, 7:39:30 PM] Steven Davis: Chris, Mike, and Armor are Skyping w Diver Ben

[7/7/18, 7:39:38 PM] +1 (626) 755-4370: GPS or survey

[7/7/18, 7:39:45 PM] +1 (626) 755-4370: GPS not super accurate

[7/7/18, 7:39:53 PM] +1 (626) 755-4370: Unless there is waas

[7/7/18, 7:40:26 PM] Steven Davis: You can use a pressure based one in small increments.

[7/7/18, 7:40:32 PM] Steven Davis: Two pressure ones

[7/7/18, 7:40:41 PM] Steven Davis: Go to same point to calibrate delta.

[7/7/18, 7:40:49 PM] Steven Davis: Then have one go 100 feet away

[7/7/18, 7:40:52 PM] Steven Davis: Repeat

[7/7/18, 7:41:06 PM] Steven Davis: I am calling Dressel

[7/7/18, 7:43:11 PM] +1 (650) 796-6296: Ok. Vince, Bowman and I are heading to a meeting just down the road from the cave then heading to the cave. Question for Ben is what does he see as smartest/quickest way to get o2 in. That sounds like it's getting worse quickly.

[7/7/18, 7:44:17 PM] +1 (626) 755-4370: Ok we're on with Ben now. Will ask

[7/7/18, 7:47:18 PM] +1 (301) 233-8525: If you get a chance throw in a quick question on electrical power

[7/7/18, 7:51:19 PM] Steven Davis: Please send notes/insight from talk

[7/7/18, 7:59:36 PM] +1 (626) 755-4370: OK notes coming from armor or someone

[7/7/18, 7:59:50 PM] +1 (626) 755-4370: On the oxygen-Ben thinks gas analyzer is bad

[7/7/18, 7:59:55 PM] +1 (626) 755-4370: Thinks ox is fine

[7/7/18, 8:03:34 PM] +1 (626) 755-4370: For every percent of you consume you make about .8 % co2 and there is no way they have lived for 2 weeks in 5% co2

[7/7/18, 8:04:06 PM] +1 (626) 755-4370: Mike A is sending two more gas monitors

[7/7/18, 8:04:40 PM] Steven Davis: Did he think our Pod design had a chance at working?

[7/7/18, 8:04:52 PM] +1 (626) 755-4370: Yes

[7/7/18, 8:06:36 PM] +1 (310) 562-4292: Did Ben say anything about ballast rocks inside the cave?

[7/7/18, 8:23:38 PM] +1 (323) 430-1160: Great

[7/7/18, 8:23:46 PM] +1 (323) 430-1160: From Ben: Good talking to you. I see the tune is one of the LOX tanks from the falcon. I presume this is titanium or composite. Any chance for an acrylic or polycarbonate window to check on the passenger?

[7/7/18, 8:29:12 PM] +1 (626) 755-4370: Tube is aluminum, one end is sealed with an acrylic plate so you can see through.

[7/7/18, 8:29:41 PM] +1 (626) 755-4370: Nothing about ballast rocks. What do you mean by that?

[7/7/18, 8:31:38 PM] +1 (626) 755-4370: Contact card omitted

[7/7/18, 8:31:50 PM] +1 (626) 755-4370: Whoops sorry, trying to add to group

[7/7/18, 8:33:37 PM] +1 (503) 896-7596 joined using this group's invite link

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[7/7/18, 8:45:18 PM] +1 (310) 562-4292: There was a request for ~600 lbs of ballast for the pod option. Way too much to carry into the cave

[7/7/18, 8:46:17 PM] +1 (503) 896-7596: Where did that come from? We calculate needing about 270 Lb max for the rigid pod

[7/7/18, 8:46:59 PM] Steven Davis: Kg/lb?

[7/7/18, 8:47:46 PM] +1 (503) 896-7596: 270 pounds

[7/7/18, 8:54:46 PM] +1 (626) 755-4370: There is bound to be many lbs of lead on diving weight belts available that we planned to use-wrapped around the tube so they are releasable

[7/7/18, 9:04:37 PM] +1 (650) 796-6296: Latest intel is 200m is longest underwater section but only 1-2m deep there. 5m is deepest submerged section. 2'x3' is most narrow underwater section and is 15m long.

[7/7/18, 9:07:20 PM] +1 (650) 796-6296: They are trying to take first kid out now. They have low confidence in being able to do exploratory tunnels and pumping not expected to get ahead of incoming rains. Maybe just keep up. There are 5 chambers and they have 2 drained.

[7/7/18, 9:08:08 PM] +1 (650) 796-6296: Pods likely the most helpful thing if the co-diving is not getting it done

[7/7/18, 9:08:23 PM] Steven Davis: Got it. Agreed we should cancel surveyor?

[7/7/18, 9:10:03 PM] Steven Davis: (And focus on Pod/engineering)

[7/7/18, 9:10:55 PM] +1 (650) 796-6296: Yes. They are not wanting to do exploratory drilling with terrain on top of the mountain.

[7/7/18, 9:11:33 PM] +1 (650) 796-6296: So even a better fix on where the cave is prob not a huge help.

[7/7/18, 9:16:13 PM] +1 (650) 796-6296: We can help with pumps too. Won't solve it but we want to keep on top of additional rain coming

[7/7/18, 9:16:43 PM] +1 (650) 796-6296: Vince working it locally and high power here will help in case needed

[7/7/18, 9:21:17 PM] +1 (310) 562-4292: Contact card omitted

[7/7/18, 9:21:41 PM] +1 (863) 206-0685: Zach, We have an additional 2MW sorted nearby that we can bring in if needed

[7/7/18, 9:22:15 PM] +1 (310) 562-4292: Contact card omitted

[7/7/18, 9:35:44 PM] +1 (626) 755-4370: Chris use the send link function if you're trying to add folks

[7/7/18, 9:56:23 PM] +1 (310) 562-4292: The survey equipment from Bangkok has a one week lead time. Only part of the system is on hand.

[7/7/18, 9:57:02 PM] +1 (650) 796-6296: Steve can you provide more intel on the survey equipment that would come from Germany if we do that?

[7/7/18, 10:06:02 PM] Steven Davis: Survey notes:

1. Surveyors have been cancelled
2. These were land surveyors, meaning they could only survey from entrance to first pool. That was useful when purpose was to drill to drain water. If drilling for oxygen, that is farther downstream and we would need the underwater survey team too for a complete survey
3. However, if drilling for oxygen, the land survey would have positive value since it at least reduced error band at end
4. I will forward you list of equipment surveyor was going to bring
5. We have the most complicated part of the equipment (total station) in Germany. I

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will halt it from shipping to USA (was going to ship on Tuesday) so it is not stuck in transit if we need it. We can also discuss having it shipped to you now, but we should see what happens in next few hours.

[7/7/18, 10:14:23 PM] Steven Davis: A few notes on schedule:

1. E plane departs at 6 AM
2. Before departure, we will monitor current rescue effort
3. Before departure, we will do a pool test/video - currently working on getting a pool
4. While plane is in air, we can test the other "qual unit" in the bathtub and/or ventilation duct apparatus and/or any other test we can think of.

[7/7/18, 10:16:59 PM] +1 (626) 755-4370: Sun doesn't come up till 5:50 tomorrow, not sure how we get a test video in daylight and leave at 6am unless plan has changed to do video overnight

[7/7/18, 10:17:18 PM] Steven Davis: Indoor pool

[7/7/18, 10:17:45 PM] +1 (310) 562-4292: Bay club has an indoor pool

[7/7/18, 10:19:42 PM] +1 (626) 755-4370: Ok we should start talking about getting some divers rested who can dive tomorrow morning. Dangerous for People who have been working this all day to be diving at 3am or whatever

[7/7/18, 10:25:35 PM] +1 (503) 896-7596: Test plan:  
Outfit with plumbing and cylinders and weight belts

Dry handling test in tubes built by boring company (not flooded) optional

ECLSS test on land (mandatory before anyone goes inside underwater)

Maneuvering test underwater in a pool with nobody inside and go thru steel frame that is representative size

Put a small person inside underwater- need to figure out an emergency bailout plan

Need list:

300 lbm of dive weights

8 diving weight belts

2 scuba cylinders to attach

Bailout system- maybe will's bailout bottle

Underwater camera setup

[7/7/18, 10:26:53 PM] +1 (616) 406-7460: image omitted

[7/7/18, 10:27:03 PM] +1 (626) 755-4370: I have a couple belts and maybe 50 lbs

[7/7/18, 10:29:03 PM] +1 (503) 896-7596: I have 20 lbs and no belts

[7/7/18, 10:30:36 PM] +1 (516) 587-3899: image omitted

[7/7/18, 10:31:12 PM] +1 (310) 562-4292: Got some more info. There is no rocks or weight that can be added for ballast purposes in the cave.

[7/7/18, 10:31:12 PM] +1 (310) 562-4292: Also the tightest constriction is only large enough for a skinny adult male. They dont have measurements.

[7/7/18, 10:31:13 PM] +1 (310) 562-4292: Like the British dude that you first met the other day.

[7/7/18, 10:32:06 PM] +1 (310) 562-4292: The 32-38 cm restriction is sounding accurate from the British divers

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[7/7/18, 10:33:04 PM] +1 (626) 755-4370: That's the dry construction or the one diving one that's 15 ft long  
 [7/7/18, 10:33:11 PM] +1 (626) 755-4370: Constriction  
 [7/7/18, 10:36:03 PM] +1 (503) 896-7596: We heard it was 2 ft x 10 feet from the diver named Ben  
 [7/7/18, 10:36:16 PM] +1 (503) 896-7596: He was saying that height is an issue but width is not  
 [7/7/18, 10:39:41 PM] +1 (310) 562-4292: The British team agrees height is the issue. It's a belly crawl. There's zero visibility in this section of the cave, no idea who's more correct  
 [7/7/18, 10:41:40 PM] +1 (310) 562-4292: video omitted  
 [7/7/18, 10:42:11 PM] +1 (310) 562-4292: Scary tight  
 [7/7/18, 10:47:24 PM] +1 (616) 406-7460: image omitted  
 [7/7/18, 10:48:02 PM] +1 (616) 406-7460: image omitted  
 [7/7/18, 11:00:04 PM] Steven Davis: Looks awesome. Likely pool testing tonight and qual testing in Test Facility Bravo tomorrow.  
 [7/7/18, 11:04:51 PM] +1 (616) 406-7460: Copy. Can we get clarity on whether or not to cut it and if so, how large to make the parts?  
 [7/7/18, 11:05:28 PM] Steven Davis: Call cell  
 [7/7/18, 11:06:30 PM] +1 (323) 430-1160: Looks like we are getting access to Pali High School Pool  
 [7/7/18, 11:06:37 PM] +1 (323) 430-1160: image omitted  
 [7/7/18, 11:08:36 PM] +1 (818) 903-0235: Realistically how much time do we need to be ready?  
 [7/7/18, 11:08:45 PM] +1 (323) 430-1160: Ok or should we shoot for bigger?  
 [7/7/18, 11:13:34 PM] Steven Davis: Is it well-lit?  
 [7/7/18, 11:14:10 PM] +1 (616) 406-7460: We just bought a ton on extension cords and work lights  
 [7/7/18, 11:14:17 PM] +1 (616) 406-7460: Of\*  
 [7/7/18, 11:16:02 PM] +1 (626) 755-4370: Does it have a deep end for diving?  
 [7/7/18, 11:16:31 PM] +1 (818) 903-0235: Can be fully lit enough to do evening swim meet  
 [7/7/18, 11:16:45 PM] Steven Davis: Chris E said 3-4 hours for nosecone attachment  
 [7/7/18, 11:17:50 PM] +1 (323) 430-1160: Has a deep end, but not an Olympic platform...checking on depth. They do have diving boards  
 [7/7/18, 11:18:25 PM] +1 (323) 430-1160: image omitted  
 [7/7/18, 11:18:55 PM] +1 (323) 430-1160: image omitted  
 [7/7/18, 11:29:10 PM] +1 (503) 896-7596: Based on open work I propose the following timeline (which Elon agreed to so if everyone else is on board we can start executing).

Finish the pod tonight

7am dry fit check in boring company tube (Mike Lee)

8am assemble plumbing for in water configuration and dry ECLSS test (Chris/Ted/Armor)

9am transfer to pool and perform pool testing (Armor)

12:30am pack up

2:30pm wheels up (hardstop due to Thailand airport requirements)

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[7/7/18, 11:35:51 PM] Steven Davis: Sounds great. When can second Pod be ready for additional qual testing while you are in air (even with flat-plate nose)?

[7/7/18, 11:38:09 PM] +1 (616) 406-7460: What modifications or preparing can/should we do for the boring company tube?

[7/7/18, 11:39:20 PM] +1 (650) 796-6296: Did you all see the tight squeeze video that bowman sent? We have not 100% confirmed that this was actually this cave, but their were anecdotes that it was. If so, very tight. It would match the .38m from the map.

[7/7/18, 11:39:20 PM] +1 (310) 562-4292: Vince, Zach and I are leaving the site. We'll head back this evening for the day's debriefing.

[7/7/18, 11:40:23 PM] +1 (650) 796-6296: Armor's chat with the diver saying 2' would be much better

[7/7/18, 11:41:03 PM] Steven Davis: I didn't hear back from E on the ducting. My gut is that we don't need to transfer it to the pool because either:

1. He won't want it
2. If he does, we can just use a 20' straight section
2. If he does want it,

[7/7/18, 11:41:08 PM] +1 (626) 755-4370: The diver on that call said the squeeze that was under water was about 2 ft and the floor was gravel so could be dig out a little more if something got stuck

[7/7/18, 11:41:31 PM] +1 (917) 370-8640: We can have the second unit ready by noon

[7/7/18, 11:41:44 PM] Steven Davis: Thx

[7/7/18, 11:41:47 PM] +1 (626) 755-4370: I'm not sure if we asked if he had personally been to it or not or was just relaying from other divers

[7/7/18, 11:42:18 PM] +1 (917) 370-8640: \*flat nose version

[7/7/18, 11:42:42 PM] +1 (626) 755-4370: The pics sent around also seemed to have pretty good visibility as compared to reports of low vis

[7/7/18, 11:44:59 PM] +1 (626) 755-4370: Is there a call in for debrief tonight?

[7/7/18, 11:45:00 PM] +1 (503) 896-7596: Ducting guys: plan is to leave the big 3 foot ducting at the boring company. We want to bring the steel frame to the pool

[7/7/18, 11:45:56 PM] +1 (310) 562-4292: No call for the meeting

[7/7/18, 11:48:59 PM] +1 (321) 543-5401 joined using this group's invite link

[7/7/18, 11:51:50 PM] +1 (650) 796-6296: We'll get notes out though

[7/7/18, 11:52:14 PM] +1 (650) 796-6296: It's an ops debrief from the thai govt team on today's activities.

[7/7/18, 11:54:29 PM] Steven Davis: From E: for initial pool testing, no steel ducting.

[7/7/18, 11:56:00 PM] +1 (310) 562-4292: ราชบัณฑิตยสถาน (updated 8 July 18) • 2 pages document omitted

[7/7/18, 11:58:16 PM] +1 (818) 903-0235: I will send Pool info shortly

[7/8/18, 12:19:04 AM] +1 (616) 406-7460: Who is 321-543-5401?

[7/8/18, 12:28:51 AM] +1 (626) 755-4370: Mike Lee-working testing planning

[7/8/18, 12:30:15 AM] +1 (616) 406-7460: Copy

[7/8/18, 12:34:00 AM] +1 (408) 203-2072: Team in chaing rai - was just picked up and they are taking me to the hotel. Let me know where to meet you.

[7/8/18, 2:01:03 AM] +1 (310) 562-4292: The divers here dispute the video with the tight squeeze. The water is much murkier and the opening is larger, ~2'. The numbers are all over the place...

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[7/8/18, 2:12:49 AM] +1 (323) 430-1160 added +1 (603) 438-7126  
 [7/8/18, 4:58:43 AM] +1 (408) 203-2072: We are heading to the site for a meeting. Contradicting reports saying 2 boys are freed. No official confirmation yet.  
 [7/8/18, 5:35:26 AM] +1 (650) 796-6296: Confirmation that 2 are out. We're gonna find out what the tentative schedule forward is. Hearing next group will be big - 6 kids.  
 [7/8/18, 5:58:42 AM] +1 (408) 203-2072: They are continuing with the rescue operation tonight to try and get two more out today. After that there is a 20 hr window starting around 10am tomorrow where survey could happen.  
 [7/8/18, 6:00:12 AM] Steven Davis: So 2 are out and zero are enroute?  
 [7/8/18, 6:00:56 AM] Steven Davis: Was told that 4 were enroute now. Is that inaccurate?  
 [7/8/18, 6:01:25 AM] +1 (310) 562-4292: 4 out and safe. Going to the hospital!  
 [7/8/18, 6:02:08 AM] Steven Davis: Awesome. And going for 2 more for total of 6?  
 [7/8/18, 6:11:30 AM] +1 (408) 203-2072: There is a parallel plan to drill laterally towards the cave for air injection and water drainage. Herrenknecht has a drill coming tomorrow but accuracy of location is still issue. Thai team here will start survey work at entrance of cave tomorrow to survey first portion but they need help in remaining portion. If we can get equipment here (imu) asap to continue survey that would be most helpful. They still believe bringing pods would be useful in case some of the children are weaker.  
 [7/8/18, 6:16:02 AM] +1 (650) 796-6296: Steve can you call?  
 [7/8/18, 6:33:15 AM] +1 (650) 796-6296: We are going to the cave at 9am to talk to the seal team about how to use the imu. Any info on Nemo or IMULE for underwater survey will help us prep for this mtg.  
 [7/8/18, 6:34:10 AM] Steven Davis: Best 2 contacts are Corey, Ben, and Kenny Broad. Connecting you w Kenny now.  
 [7/8/18, 6:39:27 AM] +1 (650) 796-6296: Continue to have no luck with getting Ben. Will reach out to Corey. I'm really interested to see if we can use the mnemo to do dry sections as well after the first flooded section  
 [7/8/18, 6:39:42 AM] Steven Davis: Call Kenny. He just texted u  
 [7/8/18, 7:06:33 AM] +1 (408) 203-2072: Is mike C traveling on Es jet tomorrow?  
 [7/8/18, 7:06:53 AM] Steven Davis: Yes  
 [7/8/18, 7:07:08 AM] +1 (408) 203-2072: Copy thanks  
 [7/8/18, 7:07:15 AM] +1 (310) 562-4292: Can someone send us pictures, schematics, etc.. for the pods? We'll be talking with the Seals tomorrow morning and need to explain it.  
 [7/8/18, 7:07:41 AM] +1 (626) 755-4370: When do you need them by?  
 [7/8/18, 7:08:04 AM] +1 (310) 562-4292: 9-10 hours  
 [7/8/18, 7:08:12 AM] +1 (626) 755-4370: Wilco  
 [7/8/18, 7:09:26 AM] +1 (626) 755-4370: Will develop documentation during those exercises over next few hours  
 [7/8/18, 7:09:43 AM] +1 (626) 755-4370: During testing exercises  
 [7/8/18, 8:16:41 AM] +1 (650) 796-6296: Hey all - things continue to be fluid here. Tomorrow is turning into another rescue day (I think because today went so well).  
 [7/8/18, 8:17:24 AM] +1 (650) 796-6296: Our meeting with the seals at 9 have been called off but please still send the schematics and pics because we don't know when we'll get a target of opportunity to talk to the divers.

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[7/8/18, 8:20:49 AM] +1 (650) 796-6296: Not sure how many they will try to get out tomorrow, but the number 6 keeps getting thrown around.  
 [7/8/18, 8:26:55 AM] +1 (503) 896-7596: Pod is looking pretty good. Will send pics along in a bit  
 [7/8/18, 8:30:24 AM] +1 (503) 896-7596: image omitted  
 [7/8/18, 8:30:41 AM] +1 (503) 896-7596: image omitted  
 [7/8/18, 8:57:50 AM] +1 (321) 543-5401: Pod is en route to the pool  
 [7/8/18, 8:58:02 AM] +1 (321) 543-5401: Per google eta 22 min  
 [7/8/18, 9:07:19 AM] +1 (301) 233-8525: Solid. We're setting up now. Proposal: Get our bearings at 4' on the near side, do a few drills, etc  
 Transfer over to the 14' for more serious testing  
 [7/8/18, 9:07:34 AM] +1 (301) 233-8525: image omitted  
 [7/8/18, 9:19:44 AM] +1 (321) 543-5401: Armor and I are en route with o2 sensors, tanks, gopros, and our dive gear  
 [7/8/18, 9:20:10 AM] Steven Davis: Any pressure sensors?  
 [7/8/18, 9:21:12 AM] +1 (321) 543-5401: One, but not battery powered  
 [7/8/18, 9:21:27 AM] +1 (503) 896-7596: Don't need pressure sensors  
 [7/8/18, 9:21:33 AM] +1 (321) 543-5401: Pool crew- can you scrounge up some ratchet straps, or send someone out to get them?  
 [7/8/18, 9:21:46 AM] +1 (503) 896-7596: @13234301160  
 [7/8/18, 9:25:30 AM] +1 (785) 764-0421: Got the ratchet straps. Pod is at the pool  
 [7/8/18, 9:28:41 AM] +1 (785) 764-0421: Armor can you pls send someone with a pressure sensor?  
 [7/8/18, 9:29:03 AM] Steven Davis: Will want to show pressure profile in Pod to Thai, even tho is common sense. Not urgent, and can happen on later test or Pod. Just sometime before it lands in Thailand. Thx.  
 [7/8/18, 9:29:18 AM] Steven Davis: And send pics of pool test!  
 [7/8/18, 9:31:54 AM] Steven Davis: Sam Waldman verified IMULE will NOT work for water nav.  
 [7/8/18, 9:34:41 AM] +1 (785) 764-0421: image omitted  
 [7/8/18, 9:34:53 AM] +1 (785) 764-0421: image omitted  
 [7/8/18, 9:35:00 AM] +1 (323) 430-1160: Any video?  
 [7/8/18, 9:36:01 AM] +1 (785) 764-0421: Stills on the dry, will video water test momentarily  
 [7/8/18, 9:43:16 AM] +1 (785) 764-0421: video omitted  
 [7/8/18, 9:44:55 AM] +1 (503) 896-7596: Left SpaceX and I'm 17 mins out, Ian Fischer is coming with the rental gear we need and he is 35 mins out  
 [7/8/18, 9:55:57 AM] +1 (323) 430-1160: I'm 20 out

Ashish our video editor is 40 out

[7/8/18, 10:36:48 AM] +1 (301) 233-8525: For Powerwall the current proposal is to cancel the operation due to deployment concerns, practically of our product in this environment, absence of strong request on site, and the expedited timeline of the rescue operation.

If anyone feels differently please speak up.

[7/8/18, 10:41:13 AM] +1 (301) 233-8525: Consequently, plan of record is that Tesla components and Dave and I won't be flying. This also helps alleviate cargo concerns

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[7/8/18, 10:45:36 AM] +1 (310) 956-5308: That sounds like the right move to those of us here on the ground. Coryell has gensets moving for the only expanded power needs we expect to see.

[7/8/18, 10:48:07 AM] Steven Davis: Agreed

[7/8/18, 11:08:12 AM] Steven Davis: You saw E's note? Do we know the approx height/weight of the "smallest lad?"

Risk of our Pod is its length/radius of curvature. If this kid is 3'6" tall, we would consider a shorter one.

Flo is checking but is 1 am there.

[7/8/18, 11:10:00 AM] Steven Davis: Is 11 years old - average height for 11 year old is 3'7"

[7/8/18, 11:17:18 AM] +1 (503) 896-7596: We would plan to use the tube we have but a smaller child means we can put more weight inside which is easier conops

[7/8/18, 11:19:06 AM] +1 (408) 203-2072: Haven't been able to get any more info on height

[7/8/18, 11:26:40 AM] +1 (262) 227-0668 joined using this group's invite link

[7/8/18, 11:30:11 AM] +1 (616) 406-7460: Who is 262-227-0668?

[7/8/18, 11:30:43 AM] +1 (262) 227-0668: Ashish - I work with the marketing team at SpaceX

[7/8/18, 11:31:26 AM] +1 (616) 406-7460: Copy

[7/8/18, 11:41:42 AM] +1 (785) 764-0421: image omitted

[7/8/18, 12:06:24 PM] +1 (323) 430-1160: image omitted

[7/8/18, 12:07:53 PM] +1 (323) 430-1160: video omitted

[7/8/18, 12:08:49 PM] +1 (323) 430-1160:

<https://twitter.com/elonmusk/status/1016029967270928384?s=12>

[7/8/18, 12:09:15 PM] +1 (626) 755-4370: Rolling out to pool, eta 40 min

[7/8/18, 12:09:25 PM] +1 (626) 755-4370: Have second cap, gauge, rtv, etc

[7/8/18, 1:24:16 PM] +1 (323) 430-1160: video omitted

[7/8/18, 1:27:27 PM] +1 (323) 430-1160: video omitted

[7/8/18, 1:56:16 PM] +1 (323) 430-1160:

<https://twitter.com/elonmusk/status/1016063173139427329?s=12>

[7/8/18, 2:08:20 PM] +1 (616) 406-7460 added +1 (303) 956-6736

[7/8/18, 2:54:47 PM] Steven Davis:

<https://mobile.twitter.com/elonmusk/status/1016070898590232577>

[7/8/18, 3:13:54 PM] +1 (310) 704-3319 joined using this group's invite link

[7/8/18, 3:29:30 PM] +1 (323) 430-1160: image omitted

[7/8/18, 3:36:59 PM] +1 (310) 956-5308: See you all soon! Impressive work by you all back there.

[7/8/18, 3:37:57 PM] +1 (650) 796-6296: Thanks Sam - what is your latest eta?

[7/8/18, 3:39:05 PM] +1 (323) 430-1160: Approx 10pm local

[7/8/18, 3:39:22 PM] +1 (650) 796-6296: Great - thank you

[7/8/18, 3:41:53 PM] +1 (323) 430-1160: If you guys on the ground have any input on what questions the government/divers would want to know about the pod we can prep info and documentation in advance

[7/8/18, 3:43:31 PM] Steven Davis: Good call. Regulators always ask one question - factor of safety.

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[7/8/18, 3:44:49 PM] +1 (650) 796-6296: Agreed. Also basic specs and operations would be helpful. If we get time with the seals that would operate it we will share and get feedback.

[7/8/18, 3:45:14 PM] +1 (650) 796-6296: The pics and videos are great for this - thanks

[7/8/18, 3:47:52 PM] +1 (626) 755-4370: We are working on some basic documentation now-will try to get done in the next 30-60 Mina

[7/8/18, 3:50:33 PM] +1 (650) 796-6296: Perfect - thanks

[7/8/18, 3:51:43 PM] +1 (323) 430-1160: video omitted

[7/8/18, 3:51:54 PM] +1 (785) 764-0421: Zach, what fitting interface do they have on the scuba bottles?

[7/8/18, 3:52:42 PM] +1 (650) 796-6296: I'll find out.

[7/8/18, 3:53:11 PM] +1 (650) 796-6296: Also for folks coming out - get the messenger app Line. Thai team uses it a lot.

[7/8/18, 3:54:20 PM] +1 (310) 956-5308: What fittings are needed for the pod?

[7/8/18, 3:55:16 PM] +1 (503) 896-7596: We ultimately need to connect to -3 or -4 straight threat boss ports. We have an array of adapters and hoses to connect to what they have

[7/8/18, 3:57:07 PM] +1 (616) 406-7460: Who is 310-704-3319?

[7/8/18, 3:57:24 PM] +1 (310) 704-3319: Kevin Lohner

[7/8/18, 3:57:53 PM] +1 (616) 406-7460: Copy that!

[7/8/18, 4:05:50 PM] +1 (503) 896-7596: When we get there, developing the conops of how we use the pod will take a decent amount of discussion with the divers. There are several ways we can configure the pod and pod conops depending on what the situation is and how we want to use it.

[7/8/18, 4:06:56 PM] +1 (503) 896-7596: We can work out questions like fitting interfaces during those discussions

[7/8/18, 4:15:27 PM] +1 (503) 896-7596: One question is how many bottles worth of gas (is it pure O2?) are the kids needing to make it through the longest swim section?

[7/8/18, 4:22:47 PM] +1 (516) 587-3899: For consideration: a winch on land that connects to pod lifting eye on nose cone to guide divers out and assist with current. Carribeaners and rock climbing gear like cams could be used to guide wire rope through cave obstacles. Hardline comms could be fixed to wire rope for contacting divers and/or kids. 4 man team, 2 operating winch and comms, 2 divers guiding pod through cavern

[7/8/18, 4:41:35 PM] +1 (650) 796-6296: Here's the answer on the tank fittings:

Zach: here is the answer I just got back from the. SEAL:

We use k valve and j valve tank which can connect to regular regulator.

The working air pressure is about 180 to 220 bar.

Am I answer your question?

[7/8/18, 4:41:43 PM] +1 (650) 796-6296: Does that answer the mail?

[7/8/18, 4:42:58 PM] +1 (650) 796-6296: Agreed on really working out conops. They will be down for it if we have to go this route. Simplicity will be key because it

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will be crowded and hectic.

[7/8/18, 4:43:52 PM] +1 (503) 896-7596: Ok thanks Zach, that describes a standard scuba cylinder. Our main question is how many cylinders we need to attach to the pod. So the question is how many did the each of the 4 kids require during their transit out?

[7/8/18, 5:17:38 PM] +1 (626) 755-4370: Chris bowman-working on documentation and have some stuff down. Do you have access to email or Skype to send you a link? It's on confluence so you can see live status. I sent you, Zach, flo, and Vince the link to the working document

[7/8/18, 5:21:17 PM] +1 (310) 562-4292: Chris.bowman@gmail.com

[7/8/18, 5:32:52 PM] +1 (650) 796-6296: And spx email is working for me

[7/8/18, 5:57:52 PM] +1 (650) 796-6296: Armor - we'll find out today. We think a single tank is likely for each individual dive, but they may change tanks after each water section. We will find out more as we have access to our seal contacts (they are engaged in the rescue at the moment).

[7/8/18, 6:28:40 PM] +1 (650) 796-6296: Team on the plane - do you all have rooms for tonight or do we need to help?

[7/8/18, 6:28:46 PM] +1 (650) 796-6296: 8 of you, right?

[7/8/18, 6:37:14 PM] +1 (323) 430-1160: We have rooms

[7/8/18, 6:37:15 PM] +1 (323) 430-1160: Thank you

[7/8/18, 6:37:28 PM] +1 (650) 796-6296: Great - thanks

[7/8/18, 7:36:17 PM] +1 (650) 796-6296: As we start getting raw survey data (from the mrem0, Pegasus or other system) do we have someone that can be crunching this data and fitting it to the existing French survey data. The goal being to improve accuracy as we can. Every bit helps for the directional drilling effort.

[7/8/18, 7:37:03 PM] +1 (650) 796-6296: The Thai team will try to get total station data to the first water interface later today

[7/8/18, 7:37:16 PM] +1 (310) 562-4292:

<https://www.dropbox.com/s/nz4f90sxsec2l1l1/For%20transfer.7z?dl=0>.

[7/8/18, 7:37:59 PM] Steven Davis: Sounds like a perfect job for the boring company alignment team.

[7/8/18, 7:38:35 PM] Steven Davis: I can't access the Dropbox now, but is that the French data?

[7/8/18, 7:38:50 PM] +1 (310) 562-4292: This is a 3D model of the mountain with a 2D profile of the French survey

[7/8/18, 7:39:29 PM] +1 (310) 562-4292: Still waiting on Didier for the original survey data

[7/8/18, 7:42:37 PM] +1 (323) 430-1160: image omitted

[7/8/18, 7:43:15 PM] +1 (408) 203-2072: 📎

[7/8/18, 7:48:20 PM] Steven Davis: Arwa at TBC and Tooley/Team in SpaxeX GNC are onboard to process survey data. Will send email.

[7/8/18, 7:48:58 PM] +1 (408) 203-2072: Awesome

[7/8/18, 7:49:15 PM] +1 (650) 796-6296: Kickass - thank you. As we get raw data we'll send it. Anchoring to the survey seems key to me. Just get better bit by bit to have the best possible target.

[7/8/18, 8:06:57 PM] Steven Davis: Cool. Email sent. Duncan and Don are in as well. They are quasi-familiar as they did the analysis earlier showing the IMULE wouldnt work.

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[7/8/18, 8:09:15 PM] +1 (626) 755-4370: Let me know if they run into issues. Some of the cave mapping software can best fit multiple data sources as well--can ask folks to take a look

[7/8/18, 8:18:08 PM] +1 (818) 903-0235 added +1 (951) 358-9921 and +1 (626) 241-6293

[7/8/18, 8:18:17 PM] +1 (818) 903-0235: Adding Tooley and Arwa

[7/8/18, 8:21:10 PM] Steven Davis: Will - any specific cave mapping software packages?

[7/8/18, 8:26:39 PM] +1 (408) 203-2072:

<https://leica-geosystems.com/products/laser-scanners/scanners/leica-rtc360>

This is the scanner we have coming today. We can use this for the initial dry portions if deemed useful or typical survey with total station. We believe this will be easier to carry through the submerged sections though. If we do use this it needs to be anchored outside cave and then we also need to tie in data to submerged section which will be done with more traditional methods (taught line, compass and depth readings). Any advice you guys have to make data processing easier would be great.

[7/8/18, 8:33:25 PM] Steven Davis: I put a survey meeting on books for tonight at 930 PM Thailand time (730 am tkmkrrow PST). If at least one person from Thailand could call in, would be helpful to help get the Hawthorne team going

[7/8/18, 8:34:35 PM] +1 (323) 430-1160: 9:30pm Thailand time is also our ETA in Chiang Rai

[7/8/18, 8:36:30 PM] +1 (626) 755-4370: Two most common software packages in the us are "compass" and "walls"

<http://www.fountainware.com/compass/>

<https://www.texasspeleologicalsurvey.org/software/walls/tsswalls.php>

[7/8/18, 8:37:16 PM] +1 (626) 755-4370: Thy are set for traditional cave survey data (distance, azimuth, inclination between stations)

[7/8/18, 8:37:25 PM] +1 (626) 755-4370: I'm not sure what the other data sets will look like

[7/8/18, 8:38:24 PM] +1 (626) 755-4370: But they have tools inside to do "loop closure" where you have two survey chains that should end up at the same point and they use statistical processes to do best fits with minimum data adjustment

[7/8/18, 8:38:43 PM] +1 (626) 755-4370: You could stitch multiple surveys together like that

[7/8/18, 8:39:33 PM] +1 (626) 755-4370: There are also other ad how software codes people have written to do similar data management and cleaning. There are many cave cartographers out there who would be happy to work on this problem, I am sure

[7/8/18, 8:40:11 PM] Steven Davis: Thanks. Might be useful for TBC tunnels too. Our current nav system/SW is pretty unimpressive.

[7/8/18, 8:41:08 PM] +1 (626) 755-4370: There is an open Facebook group for the national speleological society survey and cartography section here:

[https://m.facebook.com/groups/259168280860864/?ref=group\\_header&view=group](https://m.facebook.com/groups/259168280860864/?ref=group_header&view=group)

[7/8/18, 8:41:23 PM] +1 (626) 755-4370: As you can see I've already been asking for help obtaining the original maps there

[7/8/18, 8:42:09 PM] +1 (626) 755-4370: If someone wants to post links to the data sets we have and ask for help, I'm sure you'll get experienced volunteers.

[7/8/18, 8:42:56 PM] +1 (626) 755-4370: Otherwise I'm collecting some contact info for specific experts that we can ping directly

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[7/8/18, 8:48:54 PM] +1 (503) 896-7596: Does anyone on the ground know what caused the injuries to one or more of the kids during the first rescue attempt? Was it getting banged around in the cave or decompression sickness or something else?

[7/8/18, 11:17:05 PM] +1 (785) 764-0421: Here is a high level list of what we are bringing.

-1x submarine pod

-1x fitting spares kit for pod

-1x pod fit check tool

-5x o2/co2 monitors

-1x anemometer

-7x inflatable pods

-2x inflatable pod repair kits

-2x sat phones

-1x sat internet modem and router, modem confirmed activated

-3x general tool boxes

-1x general electrical kit and tools

-1x white board

[7/8/18, 11:17:32 PM] +1 (785) 764-0421: FILE\_2518.pdf

[7/8/18, 11:20:18 PM] +1 (785) 764-0421: image omitted

[7/8/18, 11:20:32 PM] +1 (785) 764-0421: image omitted

[7/8/18, 11:23:33 PM] +1 (408) 203-2072: Ok copy. There are 2 pick up trucks lined up for equipment along with vans for personnel

[7/8/18, 11:41:49 PM] +1 (785) 764-0421: Great, txs

[7/8/18, 11:59:20 PM] +1 (323) 430-1160: Do we have a good area on site to unload the pods and gear?

[7/9/18, 12:05:18 AM] +1 (408) 203-2072: There's a base camp at a temple where the meetings are held with space there for us to unload.

[7/9/18, 12:06:44 AM] +1 (323) 430-1160: Plane team crashing for a few

[7/9/18, 12:07:28 AM] +1 (323) 430-1160: Not CRASHING, but zzz

[7/9/18, 12:56:04 AM] +1 (408) 203-2072: We were able to speak to some of the British diving team and see pictures of interior of cave. They couldn't say for sure if the pod would fit or not but said divers would likely want to see it and make the call. water levels today are lower. This has made some aspects more difficult actually as the bottom terrain in some areas is very hard to traverse on foot. There is a large length where they have a zip line.

[7/9/18, 1:02:00 AM] +1 (303) 956-6736: For the pod team: there is a bolt on the forward bulkhead under the nosecone that is plugging a port. It works, but it would be good to put it with some RTV on it, from both the inside and the outside, to make sure it stays and leaks as little as possible.

[7/9/18, 6:29:15 AM] +1 (408) 203-2072: image omitted

[7/9/18, 7:26:47 AM] +1 (323) 430-1160: Good evening - we are landing in the next 5 mins. We've got two passenger vans plus trucks for all the gear and will be escorted by the military. We will head straight out to the site (no hotel stop). Elon is invited to the "command center" for a handshake with the Interior Minister (no media).


[7/9/18, 7:29:53 AM] +1 (323) 430-1160: Wheels down!

[7/9/18, 8:27:11 AM] +1 (323) 430-1160: Waiting for the Prime Minister to greet E at airport then rolling.

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[7/9/18, 9:36:49 AM] +1 (323) 430-1160: En route to command center temple  
 [7/9/18, 9:37:36 AM] +1 (323) 430-1160: image omitted  
 [7/9/18, 9:38:28 AM] +1 (408) 203-2072:   
 [7/9/18, 9:45:37 AM] +1 (863) 206-0685: Do we have hotel address? Having shipment dropped there  
 [7/9/18, 9:46:11 AM] +1 (310) 562-4292: Le meridian Chiang Rai  
 [7/9/18, 9:47:36 AM] +1 (310) 956-5308: Hotel Address: Le Meridian Chiang Rai - 221 / 2 Moo 20 Kwaewai Road, Tambon Robwieng, Amphur Muang, Chiang Rai, 57000, Thailand

Hotel Contact: +66 53 603 333

[7/9/18, 9:48:17 AM] +1 (323) 430-1160: There is a block of rooms at another hotel as well. Confirming  
 [7/9/18, 9:49:47 AM] +1 (310) 956-5308: image omitted  
 [7/9/18, 10:20:03 AM] +1 (323) 430-1160: 3 mins out  
 [7/9/18, 12:52:56 PM] +1 (323) 430-1160: video omitted  
 [7/9/18, 12:53:03 PM] +1 (323) 430-1160: (Video credit Andrew)  
 [7/9/18, 1:00:13 PM] +1 (503) 896-7596: @13234301160 we need rides arranged for us tomorrow. Boone (the seal), not sure about spelling wants us back on site at 9am which means we need to leave our hotel at 8am  
 [7/9/18, 1:01:51 PM] +1 (323) 430-1160: Copy  
 [7/9/18, 1:05:08 PM] +1 (323) 430-1160: Will be there  
 [7/9/18, 1:09:24 PM] +1 (503) 896-7596: Ok who's the point of contact?  
 [7/9/18, 1:15:01 PM] +1 (503) 896-7596: They've been putting the kids in wetsuits and under anesthetic and strapping them to a stretcher. One diver front and back, diver carries the air supplies for the kid. Requires 2 bottles but can be smaller than standard (wasn't able to get an exact number). We made it to chamber 3 and we can definitely get the pod to there but it will be a slog.  
 [7/9/18, 1:16:33 PM] +1 (503) 896-7596: Will meet with dive team tomorrow morning at 9 and decide if they want to stick with what they've been doing or use the pod in some capacity. Trying to get the rest of the kids out tomorrow.  
 [7/9/18, 1:17:49 PM] +1 (424) 200-0382: Will send you. Coordinating with Aaron and Bob, security that will stay on the ground here with you guys  
 [7/9/18, 1:47:44 PM] +1 (424) 200-0382: This will be your main POC for assisting you guys logistically. He will make sure you have drivers and can get access where you need.

Nuttapon Nakarach  
 +66 84 759 4057  
 +66 62 461 8080  
 nuttapon.n@muspacecorp.com

Also are Aaron and Bob who are security for the group staying the next few days. They will be working direct with Nuttapon as well.

+66 87-884-2122  
 Aaron Thai security  
 +66 81-257-1336  
 Bob Thai security

[7/9/18, 1:48:07 PM] +1 (424) 200-0382: We will get a direct driver contact from them shortly

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[7/9/18, 1:54:13 PM] +1 (503) 896-7596: Ok so we're lined up for drivers tomorrow at 8am? Awesome

[7/9/18, 2:26:00 PM] +1 (424) 200-0382: Yes, driver will be there at 8am at the meridian for you guys. Nuttapon has confirmed

[7/9/18, 2:32:26 PM] +1 (323) 430-1160: Once we depart Bob and Aaron are there to support you guys

[7/9/18, 8:12:23 PM] +1 (310) 844-2510 joined using this group's invite link

[7/9/18, 8:43:15 PM] +1 (310) 844-2510: This is Sam Teller - China #

[7/9/18, 9:52:22 PM] +1 (785) 764-0421: image omitted

[7/9/18, 10:13:40 PM] +1 (503) 896-7596: Not using the pods for today's rescue attempt. Good backup option if they run into issues with this attempt though. Thai navy admiral wants us to train them on how to use it after the op since we are leaving it here

[7/9/18, 10:14:18 PM] +1 (310) 562-4292: Awesome. Nice work everyone!

[7/9/18, 10:14:28 PM] +1 (503) 896-7596: Expecting the first kid out around 3-4pm local time and last person out 4 hrs after that

[7/9/18, 10:15:49 PM] +1 (503) 896-7596: Big monsoon coming so Mike is working with Xylem on how to provide significant burst of pumping power if needed

[7/9/18, 10:16:39 PM] +1 (503) 896-7596: There is also potentially an option to drill from the first chamber to a side chamber that might drain the chamber with the kids, 50m drill length. That could start soon, equipment is on site now

[7/9/18, 11:14:16 PM] +1 (301) 233-8525: Cool to see the Powerwalls got there! I'll have to give props to the logistics team! If someone has another photo or few, send em my way :)

If anyone is considering to use them, please reach out and if there is an urgent issue call support 877-798-3752

[7/9/18, 11:15:35 PM] +1 (301) 233-8525: Great work on the other efforts!

[7/9/18, 11:40:34 PM] +1 (310) 844-2510: image omitted

[7/10/18, 12:38:10 AM] You removed +1 (951) 358-9921

[7/10/18, 12:38:15 AM] You removed +1 (626) 241-6293

[7/10/18, 12:38:24 AM] You removed +1 (262) 227-0668

[7/10/18, 1:31:38 AM] +1 (310) 956-5308: image omitted

[7/10/18, 1:31:39 AM] +1 (310) 956-5308: image omitted

[7/10/18, 1:31:40 AM] +1 (310) 956-5308: image omitted

[7/10/18, 2:24:42 AM] +1 (908) 418-1389: 9th kid out

[7/10/18, 2:51:39 AM] +1 (785) 764-0421: 10th is out

[7/10/18, 4:32:38 AM] +1 (310) 844-2510: From PM:

Unofficial translation of segments of PM's press briefing, 10 July 2018

With regards to my meeting with Mr. Elon Musk last night, I have to say that I liked and admired him from the very first day that he tweeted his message with sincerity. He's a young successful man. He has businesses in satellites, aerospace, drilling and many other fields. He offered us assistance. He tweeted that he's ready to help if Thailand asked for assistance. He's ready to render support. He also tweeted that

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he admired our work, that we are in control of the situation, and that were helping the people efficiently. In the meantime, he's ready to help in all aspects. While returning (to Bangkok) last night, I met him in person, together with his staff, around 5 people. His private plane flew directly from the US to Chiang Rai, and took around 17 hours. I was returning (from my mission in Chiang Rai). We talked at the airport. We shook hands and greeted each other. I informed him about what we are doing in Thailand. With regards to the (cave) problem, he said he had his technology. He said that he wasn't fully aware about the conditions in Thailand and had never seen caves like these. He's ready to help but might have to adjust the tools somehow, to suit the area. The tools he brought are all useful. I saw that the capsule he showed, which can be used for people trapped in caves and rivers. We'll have to see how we can use this. He understands everything. He listened to my explanation. Last night he went deep into the caves/chambers. I believe that he probably had more ideas, innovations and products to be suggested. I asked him if he can help Thailand acquire more tools for rescue operations, but actually not just Thailand, but for ASEAN, as we share the same topography. I also said that Thailand stands ready to support any entrepreneurial interests, because his company is a big company and prominent in many areas. I also informed him about the EEC, connectivity, innovation, and Thailand's digital transformation. He said he was interested. He mentioned he had to go to China on a business trip, but if he has the time he might come back. For the equipment he kindly gave us, he left it for us to study and use. We'll see how we can make use of this. When you have a useful product, it might also be useful for another purpose as well. So there is always the possibility of it being modified and adjusted for future use. This is useful. I think it's very useful for me and for Thailand because we need to consider how to deal with other disasters in the future, not only the one we are facing now. It may be useful for other disasters, climate change, flooding, or landslides. I think of him as a friend. When he proposed to help Thailand, I told him that I stand ready to welcome him and for him to think of Thailand as his second home. He was positive. I invited him to come to Thailand, and possibly visit the EEC. We are preparing to build our satellites and he has his satellite business, and communications [technology]. Why don't we seek cooperation with him?  
 [7/10/18, 4:32:57 AM] +1 (310) 562-4292: Here's my father in-laws translation of the press conference

We all listened the press conference, this is what we captured:

Thai considered Elon Musk a good friend, Elon is a very successful young man.

Thailand thanks you for the capsules that he left for Thailand to study and future uses.

Thailand offers Elon Musk future Investment, which he will seriously thinking and will come back in the near future.

Thailand welcome Elon Musk as his second home.

[7/10/18, 4:39:03 AM] +1 (310) 844-2510: Thanks

[7/10/18, 6:01:03 AM] +1 (503) 896-7596: Meeting with Admiral Arpakorn confirmed for

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9am tomorrow with seals to train them on how to use the pod. Planning on giving them the pod plus spare parts to the pod but shipping tools back to the boring company

[7/10/18, 6:55:14 AM] +1 (310) 562-4292: How's the treehouse?

[7/10/18, 7:02:10 AM] +1 (863) 206-0685: image omitted

[7/10/18, 7:43:07 AM] +1 (503) 896-7596: Last diver just got out. Mission accomplished.

[7/10/18, 7:56:10 AM] +1 (408) 203-2072: ~~896-7596~~ awesome

[7/10/18, 7:58:15 AM] +1 (310) 844-2510: Wooohooo!

[7/10/18, 8:54:08 AM] +1 (310) 562-4292: image omitted

[7/10/18, 8:54:56 AM] Steven Davis: Translated, means...?

[7/10/18, 8:55:18 AM] +1 (310) 562-4292: It's Elon's Twitter post

[7/10/18, 8:55:47 AM] +1 (408) 203-2072: Sent to the large group text from Lt col janwit

[7/10/18, 4:09:53 PM] +1 (863) 206-0685: video omitted

[7/10/18, 5:00:04 PM] +1 (503) 896-7596: @16267554370 or someone in CA can you send me a pdf of the latest version of the confluence page documentation to armorharris@gmail.com?

[7/10/18, 5:23:12 PM] +1 (626) 755-4370: Cleaned up a bit, moving the actions, discussion, draft outline, etc down to a backup section. Should be enroute

[7/10/18, 5:25:15 PM] +1 (503) 896-7596: Awesome, thanks!

[7/10/18, 5:33:23 PM] +1 (503) 896-7596: @13102452197 we can't accommodate Elon's request to send them into the cave with the pod. Would require 4 divers (2 to stage tanks ahead of the main dive, 2 to do the main dive). We can't ask them to go in there and risk their lives for a demo that won't make the pod any more useful for future scenarios with different geology after everything they've done to save these kids

[7/10/18, 6:43:10 PM] +1 (408) 203-2072: Remember to take photo and video when you are meeting with divers please

[7/10/18, 6:46:14 PM] +1 (785) 764-0421: Got it

[7/10/18, 6:47:46 PM] +1 (785) 764-0421: image omitted

[7/10/18, 8:04:43 PM] +1 (408) 203-2072: image omitted

[7/10/18, 8:04:43 PM] +1 (408) 203-2072: image omitted

[7/10/18, 8:05:51 PM] Steven Davis: So well dressed. Has navy training started?

[7/10/18, 8:06:59 PM] +1 (408) 203-2072:

<https://www.facebook.com/154553218343826/posts/458010037998141/>

[7/10/18, 8:47:06 PM] +1 (785) 764-0421: image omitted

[7/10/18, 8:47:59 PM] +1 (785) 764-0421: video omitted

[7/10/18, 8:48:33 PM] +1 (785) 764-0421: video omitted

[7/10/18, 8:48:33 PM] +1 (785) 764-0421: image omitted

[7/10/18, 8:48:43 PM] +1 (785) 764-0421: image omitted

[7/10/18, 8:49:14 PM] +1 (785) 764-0421: video omitted

[7/10/18, 8:53:57 PM] +1 (785) 764-0421: image omitted

[7/10/18, 9:13:41 PM] +1 (785) 764-0421: image omitted

[7/10/18, 9:19:26 PM] +1 (785) 764-0421: image omitted

[7/10/18, 9:23:53 PM] +1 (503) 896-7596: Diver who made it to the children had some feedback:

-When the water level in the cave was dropped, they would have had to carry it with one or two people through dry spots. That would have been difficult with strapping

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on and unstrapping weights

-There is a v shaped passage in the cave which it would have been hard to make it through without being flexible. The diver didn't think it would make it as is.

[7/10/18, 9:24:03 PM] +1 (503) 896-7596: Divers name was AJ, he's a Thai diver

[7/10/18, 9:24:15 PM] +1 (503) 896-7596: Diameter wise it would have made it

[7/10/18, 9:30:17 PM] +1 (503) 896-7596: Basically it sounds like conditions inside of the cave were changing rapidly, potentially as often as we were talking to the divers

[7/10/18, 9:54:06 PM] +1 (310) 562-4292: The V sounds like what the British diver told us Monday. Perhaps they could have chipped out additional space if one of the kids was in really bad shape

[7/10/18, 9:54:44 PM] Steven Davis: Or the shorter Pod...at some point, it closes.

[7/10/18, 9:58:39 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:29:16 PM] +1 (785) 764-0421: video omitted

[7/10/18, 10:29:17 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:45:22 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:45:54 PM] +1 (408) 203-2072: who are you handing it off to?

[7/10/18, 10:47:17 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:47:37 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:48:54 PM] +1 (785) 764-0421: He is very grateful and they will be taking the pod to the naval training center (will get the center name and location)

[7/10/18, 10:50:54 PM] +1 (408) 203-2072: Very cool

[7/10/18, 10:51:25 PM] +1 (310) 844-2510: Cool

[7/10/18, 10:51:30 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:53:25 PM] +1 (785) 764-0421: image omitted

[7/10/18, 10:54:42 PM] +1 (785) 764-0421: Royal Navy will also take possession of 10 power walls

[7/10/18, 11:10:55 PM] +1 (908) 418-1389: image omitted

[7/10/18, 11:34:55 PM] +1 (785) 764-0421: image omitted

[7/10/18, 11:36:02 PM] +1 (408) 203-2072: image omitted

[7/10/18, 11:36:22 PM] +1 (408) 203-2072: Check out Thai geographers FB page

[7/11/18, 12:05:04 AM] +1 (785) 764-0421: Nice! We are all wrapped up here and

starting to head state side unless we hear otherwise. Incredible work all.

[7/11/18, 12:08:36 AM] +1 (503) 896-7596: Mike, Chris, and I will be here a bit longer tying up loose ends

[7/11/18, 12:14:28 AM] +1 (310) 562-4292: I'm flying out of BKK tomorrow night

[7/11/18, 12:33:28 AM] +1 (863) 206-0685: image omitted

[7/11/18, 12:34:06 AM] +1 (863) 206-0685: Groundwater pumping station outside of the cave pumping exit

[7/11/18, 12:36:34 AM] +1 (785) 764-0421: Heads up reports at thr Chang Rai airport to dodge

[7/11/18, 1:11:43 AM] +1 (310) 844-2510: About to email mu Space team to thank them. Anyone besides our main man Nuttapon deserve a shout out?

[7/11/18, 1:11:44 AM] +1 (863) 206-0685: Mike. You have manifest for shipping to BC?

[7/11/18, 1:41:47 AM] +1 (785) 764-0421: Chaiyos Kosalakood from Mu

[7/11/18, 1:43:18 AM] +1 (785) 764-0421: 2x NEMO boxes

1x Husky 268 piece tool set

1x flow meter, small pelican

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1x ipa kit, small pelican  
 1x large husky tool box  
 1x inflatable repair kit  
 1x mis tools, 1ft sq cardboard box  
 1x husky cloth tool bag  
 1x deWalt tool box  
 1x pelican air case, electrical  
 1x 40 gal tub, sat gear  
 2x Powerwalls  
 7x Inflatable pods  
 1x Inflatable pod repair kit  
 [7/11/18, 2:41:23 AM] +1 (863) 206-0685: image omitted  
 [7/11/18, 5:15:40 AM] +1 (408) 203-2072:  
<http://www.bbc.com/future/story/20180710-thai-cave-the-dangerous-diseases-you-can-catch-in-caves>  
 [7/11/18, 5:16:56 AM] +1 (408) 203-2072: Not meant to freak anyone out but in case  
 you feel sick nearterm may be good to get checked out  
 [7/11/18, 6:56:38 AM] +1 (503) 896-7596: Met the British cave team including Rich  
 and on a scale of 1:10 they were an 11 excited about what we did and would love to  
 work with us on an improved rev 2 of the rescue pod  
 [7/11/18, 6:57:04 AM] +1 (310) 844-2510: Would be great for them to say that  
 publicly in some way!  
 [7/11/18, 7:03:58 AM] +1 (503) 896-7596: I invited them to come to SpaceX and work  
 with us on making an improved version in the future (hopefully not taking too much  
 of a liberty here but felt like the right thing to do) and they accepted  
 enthusiastically so we could say we're doing that  
 [7/11/18, 6:01:17 PM] +1 (908) 418-1389: Armor, Coryell, and I leaving Chiang Rai  
 shortly. All Spacexers accounted for.  
 [7/11/18, 6:01:49 PM] +1 (408) 203-2072: Copy. Vince and I just landed back in La!  
 [7/11/18, 6:12:23 PM] +1 (785) 764-0421: Woohoo!  
 [7/11/18, 6:31:11 PM] +1 (650) 796-6296: Awesome to hear it. Safe travels and  
 welcome back.  
 [7/12/18, 2:33:30 AM] +1 (785) 764-0421: Heard from the rear admiral's secretary  
 that the pod is going to the Royal Thai naval special warfare command in Sattahip,  
 Thailand (~2hr SE of Bangkok).  
 [7/12/18, 6:32:55 PM] +1 (310) 562-4292: If anyone's looking for Thai food in LA,  
 this is James's cousin place in WeHo. <http://www.nightmarketsong.com/welcome/>  
 [7/12/18, 7:58:44 PM] Steven Davis: Is there any way to get someone awesome who was  
 on the ground (Thai Navy?) to speak at Hyperloop? We would fly someone out.  
 [7/12/18, 10:12:07 PM] +1 (785) 764-0421: Boon!  
 [7/12/18, 10:12:35 PM] Steven Davis: He agreed?  
 [7/12/18, 10:26:42 PM] +1 (408) 203-2072: I messaged him on Line but hadn't heard  
 back. Anyone else have a differenct contact for him?  
 [7/12/18, 10:28:08 PM] +1 (503) 896-7596: Boon was pretty unsure about being able to  
 make any commitments because he'd need permission from his commanders. We should ask  
 the rear admiral  
 [7/13/18, 8:40:23 AM] +1 (310) 562-4292: Was your luggage waiting for you?  
 [7/13/18, 9:53:02 AM] +1 (323) 430-1160 removed +1 (310) 844-2510

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[7/13/18, 9:58:08 AM] +1 (626) 755-4370: So just checking, everyone is back safely or is the caboose team still flying?

[7/13/18, 10:24:23 AM] +1 (310) 956-5308: Wallden and Coryell both contacted me yesterday from Chinese airports on their way back. I never got final confirmation they are back in the states.

[7/13/18, 10:25:43 AM] +1 (863) 206-0685: Just landed in us

[7/13/18, 11:11:55 AM] +1 (310) 562-4292: Everyone should be stateside by now. Nuttapon told me Coryell was a couple hours behind me in leaving Thailand.

[7/13/18, 11:27:06 AM] +1 (626) 755-4370: I sent out a bunch of gear-5 helmets and 10 lights. Not sure that it went to Thailand but if anyone knows whereabouts would like to get it back to its owners.

[7/13/18, 1:45:16 PM] +1 (785) 764-0421: I am back!

[7/13/18, 2:51:32 PM] +1 (408) 203-2072: ♫♫

[7/13/18, 2:57:51 PM] +1 (863) 206-0685: Mike Coryell just landed in Florida. All accounted for

[7/14/18, 5:03:18 PM] +1 (310) 562-4292:

<http://www.youtube.com/watch?v=LDMneCffUAQ&feature=youtu.be>

[7/15/18, 9:57:41 AM] +1 (310) 562-4292: Nuttapon just offered immigration police escorts for anyone's future travels to Thailand. Email me your full name, passport number and phone number if you're interested

[7/15/18, 2:19:30 PM] +1 (785) 764-0421: For all movement about the country?

[7/16/18, 10:32:09 AM] +1 (408) 203-2072: Hi all Nuttapon is coming out to LA this weekend for the hyperloop competition. He will be here 19th in the AM until 22nd evening. Let me know if you want to meet up with him while here and I'll organize it.

[7/16/18, 9:11:54 PM] +1 (310) 562-4292: No, just port of entry and departure from Thailand

[7/20/18, 9:22:04 AM] +1 (408) 203-2072: Elon Musk • 1 page document omitted

[7/20/18, 9:23:26 AM] +1 (310) 562-4292: Awesome!

[7/21/18, 12:16:44 AM] +1 (785) 764-0421: Super cool! Flo, want to send to the Thailand distro?

[7/31/18, 9:27:17 AM] +1 (408) 203-2072: Did anyone have personal tools they sent to Thailand? We have a few items over at boring co that are unclaimed.

[7/31/18, 9:29:28 AM] +1 (626) 755-4370: Hey Flo-I sent some headlamps that are still missing. I also bought some chains and chain binders that were for the sub test tube in the boring company lot. Let me know if either of those made it back

[7/31/18, 9:31:02 AM] +1 (408) 203-2072: Copy will. I'll check and let you know

[7/31/18, 3:09:03 PM] Steven Davis: LA consul just pinged me and ask if we were sending anyone to the August 1 dinner in Thailand tomorrow. I assume "no" unless anyone on this distro has better info?

[7/31/18, 3:31:44 PM] +1 (310) 562-4292: I was told the dinner had been postponed due to the dam in Laos failing. Most of the Thai military is assisting.

[8/6/18, 12:47:42 AM] +1 (408) 203-2072: Hi all- Boon just asked me if a manual was brought along with the capsule? They aren't able to find it if there was one. Can we send another via email or make one if we hadn't before?

[8/6/18, 7:21:40 AM] +1 (503) 896-7596: I gave it to Adm Akaporn, I'll send Boon a copy

[8/6/18, 8:05:53 AM] +1 (408) 203-2072: Thanks can you email it to:

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boonsak.butnean@gmail.com

[8/7/18, 2:54:17 PM] +1 (321) 543-5401: Spx receiving just let me know that we got a pallet back from Thailand with some rafts and powerwall equipment. Anyone know where this should go? Boring lot maybe?

[8/7/18, 7:52:54 PM] Steven Davis: Yes, Boring

[8/7/18, 8:22:39 PM] +1 (321) 543-5401: Copy thanks

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